



# THE MODERN HOSPITAL

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## THE ROYAL PRINCE ALFRED—A GREAT AUSTRALIAN HOSPITAL\*

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ONE naturally has a little diffidence in writing about one's own hospital, but perhaps it is best to be frank, and from our own point of view the *mot du guet* is justified. We have, of course, only an Australian standard of comparison, but the writer has had the privilege of inspecting and analyzing the systems of both American and British hospitals, and it is his opinion, prejudice perhaps, that the Royal

Prince Alfred Hospital in Sydney compares favorably with most of the best of these in its work, methods, organization; while its buildings, for the conditions of this climate, are admirable. It should be borne in mind that Sydney is a large city, with a population approaching a million, and that it is one of the great cities of the British Empire. It, therefore, needs a large hospital or hospitals, and of these it has several, the total bed accommodation of the metropolitan institutions being more than 2,000, of which the Royal Prince Alfred has the largest part. It is, however, typical of the hospitals of Sydney and Melbourne; and in a minor degree the hospitals of the other capital cities are of the same type.

*By foresight and large vision, the early promoters of the Royal Prince Alfred Hospital at Sydney provided ample opportunity for the development of the hospital as a clinical adjunct, as well as elaboration of its potentialities of serving a public which has continuously and handsomely responded to all of the hospital's appeals.*

*With the State as an active force in all financial considerations and with the public contributing in accordance with its individual abilities, the system of admission is worked out to accommodate exigencies of hospital management as well as to fill the requirements of the public. As many of the patients as are able, pay something.*

In a way, the Royal Prince Alfred Hospital, in its beginnings and general system, illustrates the large hospitals of this continent. It was founded half a century ago as the result of a public movement to memorialize perpetually the satisfaction of the people at the recovery to health of Prince Alfred, a young brother of the late King Edward VII, of England, who was shot while visiting the city.

A sum of about £30,000 (\$150,000) was raised, and the promoters of the movement agreed that another hospital for Sydney would be the most suitable form for the memorial to take. As a result of much negotiation, it was ultimately decided that the hospital should be built as an adjunct to the Sydney University, on a large, historic, park-like area given by the State to that institution, between several of the colleges affiliated with it. The object of this union was to make it a clinical school to become a part of a medical school which should ultimately be instituted. One of the conditions of the transfer of the land was that the senate of the University equally with the board of directors, should have a voice in the appointment of the medical staffs, so that they might be fitted as teachers in the future, and that

\*This article appears in two parts. The second part will be printed in the February issue of THE MODERN HOSPITAL.

the hospital should make provision for the clinical teaching of students. This scheme was embodied in a State Act of Parliament which became the hospital charter. The hospital was thus destined before its birth to become a clinical school, and it is now the principal one attached to the medical school of the University, with some 300 students in various years of training attending its practice.

It was, of course, impossible to build a hospital suited for such a purpose with £30,000, and the promoters had to face a problem as to whether they should build a small complete hospital with their money, which would be of no use as a clinical school, or begin a big hospital. They comprised some men of large mind and great foresight, including Sir Alfred Roberts, a retired surgeon of great capacity, who during its earlier years was the genius of the institution. These men were willing to take the risk. The result is a hospital carefully organized from the outset as to its buildings and future work, with the ultimate aim of reaching 500-bed capacity, situated in a fine locality, surrounded with open spaces, yet close to a large industrial population. The Government of that day, fortunately, was impressed with the future need and potentialities of a hospital such as that proposed, and came to the help of the builders, with the result that during the years it has contributed handsomely to the cost, and between the public and the State there are now buildings erected which have cost approximately £400,000 (roughly, two million dollars), which very nearly fulfill all the needs of a hospital of this size. I say very nearly advisedly. There are, of course, other buildings needed. There is need, for example, for a new and complete out-patient and casualty department, capable of dealing with 100,000 out-patients a year; of an isolation block with 100 beds for incipient mental, septic, and infectious diseases (including incipient tuberculosis and venereal diseases), which should in part be a sort of clearing house for these cases prior to their departure for the special hospitals provided for them. These buildings are already projected and have been promised by the Government. A first step is to be immediately taken by the erection of a venereal block, the lower floor of which shall be an out-patient venereal department, capable of treating 1,000 out-patients at one time, with wards above for female cases and children suffering from these diseases.

#### Treatment of Venereal Disease Pioneer Step

In this matter of the treatment of venereal diseases as a part of the work of a general hospital, the Royal Prince Alfred has been the pio-

neer of Australian hospitals. Some fifteen or twenty years ago the board took over, with some doubts, a ward for twenty beds from the Sydney Hospital—then about to rebuild in part—which was devoted to female cases. These were then mostly of the prostitute variety, with some others among them, and they were at the outset fenced off from the other patients and made to feel their position as social pariahs. Consequently, they resented their segregation and created so much disturbance that the board, with great perspicacity, decided to remove all traces of differentiation between them and other cases, and to the surprise of many, there was no further trouble. Since then, up to a few years ago, these constituted the venereal element in the hospital, but latterly women were taken for out-patient treatment, also subsequently, at the request of the Government abroad, fifteen beds were opened for children with these diseases.

About five years ago a Labor Government came into power in the state. The first Minister for Health was appointed, who, with some good but crude ideas, wanted to do something to check the spread of this form of disease. He was especially anxious to establish night clinics for the treatment of both men and women, and asked the board to establish these as part of the hospital routine, so that the patients could come for treatment out of working hours. The Government, of course, offered to provide the means, and again, with some misgivings, the board tried to meet the minister's wishes. The result was that when the hospital was declared open at night for those suffering from syphilis and gonorrhea, the place was overwhelmed. As many as 1,000 patients attended at one time, and so great was the press that the thoroughfare looked as though it led to the races, and the police had to be brought in to keep order. This certainly showed the need for the system, but it was too much for the hospital to undertake with the restricted accommodation for its out-patient department and for its staff, and the board had, perforce, to limit the numbers to 400 patients at one time on the books. Other hospitals have since been asked to assist in the work and some have taken it up. Now Parliament has passed an act making notification of venereal disease to the authorities compulsory, with heavy penalties, and treatment by medical men compulsory; but as accommodation is not yet available in the hospitals for treatment on the broad scale of these cases, which is a *sine qua non*, the Government is proposing to erect a building in the hospital grounds as outlined above, and plans are drawn for it.

It should be explained here, perhaps, that in



this country the state is the dominant factor in our system of hospital finance. The voluntary system, as known in Great Britain, would be impossible here, as we have no great rich or aristocratic classes who, on the *noblesse oblige* principle, maintain hospitals. Great Britain and Australia have not American multi-millionaires to erect and endow their hospitals. The state has always accepted the partial maintenance of its hospitals as part of its functions, and in this state a system has been in force for many years under the Hospital Act by which the state contributes pound for pound (or dollar for dollar) on all amounts raised by hospitals from the public other than from patients for their maintenance. This hospital participates in this subsidization to a limit of £4,750 per annum—an arbitrary limit—but in addition, the state, recognizing that the maintenance of a great hospital is impossible on such a basis, even without limitations, contributes special subsidies to this hospital and to the Sydney Hospital, and maintains entirely another large hospital, which is for infectious and chronic cases rather than for acute medical and surgical cases. This method is satisfactory so long as the State has plenty of funds, and so long as it does not take control of the hospitals.

Under our Act of Incorporation, the management is in the hands of a board of directors of twenty-two, of whom two—the chancellor and dean of the faculty of medicine—represent the University; ten are Government nominees—generally men of position, including some medical men; ten are elected—five each alternate year—by the subscribers. The state is thus well represented on the board, but it rarely interferes either directly or through its representatives. The board has been progressive, economical, and business-like with the one purpose of safeguarding the interests of the state and the public. It has been contributing practically one-half the income needed. But, of course, changes are always possible—in fact, one is now predicted. The nationalization of health hospitals is a plank in the platform of the labor party, now in power in the state.

I am not proposing to discuss here our hospital system generally, and it may be of interest to

your readers to know something of our financial methods. In this respect the Royal Prince Alfred may be regarded as typical of the larger hospitals, at least in this state. As has been explained, about 50 per cent of our income is from the state and about 15 per cent from public voluntary contributions and other sources, such as fees from visitors, the hospital auxiliary, shop, etc., the balance being from patients. It must be borne in mind, however, that unlike the majority of American public hospitals, this hospital has no private patients and is purely a public hospital, except for about ten one-bed wards, devoted to our own nurses, doctors, students, etc., and an occasional military or naval officer or clergyman. Our patients are all of the class who cannot afford to pay for private medical treatment. This, however, does not imply anything in the way of pauperism. The average Australian is a very inde-

pendent person and would resent any such scheme. He expects to get attention, however, as a citizen, in a hospital supported by the state, to the maintenance of which he, as a taxpayer, indirectly contributes. If he has not the means to contribute something to the cost of the maintenance, he can get in without contributing anything. If he can contribute something, however, he is expected

to do so, and, be it said, does it generally without demur. In fact, it appeals to his independence to do it. He considers, perhaps, when he contributes one or two dollars per week that he is paying for his medical attention, and such a consideration prevents him from feeling that he is a beggar receiving a dole.

#### Uniform Routine for Admissions

Our system of admission may have some interest for your readers. Every applicant for admission has to go through the same routine. Emergency, illness, or accident cases are admitted at all times without question, but patients not recommended by a medical man for admission (immediate or otherwise) have to appear at the hospital and see the admitting officer, who, if they have the proper qualifications as to their medical condition and their want of financial ability to pay outside, arranges for their admis-



A front view of the Royal Prince Alfred Hospital shows the long buildings extending over several blocks of city area.

sion. But before this proceeding, each patient has to answer to a special clerk, questions as to his position in life, to enable the admitting officer to determine his financial status. Practically the greater the financial inability of the patient, the greater his chances of admission, but once admitted, no discrimination whatever is made between patients, whether they pay nothing or say eight dollars a week. In fact, the financial basis of their admission does not appear upon their his-



Members of the Auxiliary conduct a very successful and inviting tea room.

tory sheets and is not known in the wards. Occasionally, of course, there are people who can afford to pay who try to evade their obligations, but we think this occurs very rarely. Possibly one-half of those patients who are admitted are recommended by medical men, who know their financial condition as well as the nature of their complaint. This practice acts as a safeguard.

#### Medical Staff Purely Honorary

The medical staff other than the resident medical staff, which numbers twenty-eight, is purely honorary, and consists of the professors of medicine, surgery, pathology, and pharmacology in the University, the lecturers in gynecology and eye diseases, clinical lecturers in medicine and surgery, and the demonstrator in physiology, together with other physicians, surgeons and specialists, totaling about sixty, who, as I have already explained, are appointed by a joint board, consisting of the senate of the University, sitting with the board of directors of the hospital. Nearly all these men are in practice and no doubt gain much in public esteem from their connection with the hospital, but they give it valuable services without charge, and naturally would, therefore, object to the admission of persons who could afford to pay them fees in practice. This, again, is a check on imposition.

Should there be any doubt as to the *bona fides*

of applicants for admission, they are asked to sign the following declaration before a magistrate, viz.:

#### ROYAL PRINCE ALFRED HOSPITAL SYDNEY, N. S. W.

##### APPLICATION FOR ADMISSION AS AN IN-PATIENT

(Also treatment as an out-patient)

Name .....  
 Address .....  
 Age ..... Social Condition (Married or Single) .....  
 Religion ..... Native Place .....  
 How long resident in the State .....  
 Occupation (of husband where wife applying) .....  
 Occupation of wife ..... And earnings, if any .....  
 Where and when last employed .....  
 Weekly wages .....  
 Number of children ..... Age of oldest and youngest .....  
 Earnings of children .....  
 House rent .....  
 Name of landlord .....  
 What other source of income, if any .....  
 Total income last six months .....  
 Club or benefit society ..... What benefit .....  
 Life or accident insurance .....  
 Particulars of real or personal property .....  
 Estimated value .....  
 Funds possessed of .....  
 Reference .....  
 Remarks .....  
 In case of minors—  
 Name of father, mother, or guardian .....  
 Address .....  
 Occupation .....  
 Address of nearest friends (for communication) .....  
 FORM OF DECLARATION

I .....  
 am an applicant at the Royal Prince Alfred Hospital, Sydney, and  
 I do hereby solemnly and sincerely declare that I am unable to pay  
 for outside medical attendance and that the answers given to the  
 foregoing questions on this document are true in every particular; I  
 make this solemn declaration, conscientiously believing the same to  
 be true.

Made and subscribed at Camperdown, Sydney, .....  
 day of ..... 19.....

Signature .....  
 Before me

Justice of the Peace.

As a result of this system, the hospital receives contributions from, or on behalf of, approximately



All the necessities of ordinary life can be purchased at the hospital shop.

two-thirds of the patients admitted, the balance being accident cases (for whom no payment is asked) and non-paying cases.

In reviewing the consumption of whisky at Mount Sinai Hospital, New York City, a large decrease was found to have taken place in the last ten years. The amount consumed has gone down from almost one gallon per bed in 1910, to one-tenth of a gallon per bed in 1920. This is partly due, no doubt, to changes in therapeutic practice, to the greater care in handling supplies, and partly to the pressure of new laws.



## TRUDEAU SANATORIUM CONSTRUCTS IDEAL COTTAGES

By SCOPES AND FEUSTMANN, ARCHITECTS, SARANAC LAKE, N. Y.

FOR a period of about twenty-eight years, the usual method of housing patients at Trudeau Sanatorium has been in cottages which contain four bedrooms, a sitting room, and an ample porch for taking the outdoor rest-cure. The earlier cottages of this type contained no plumbing, bathrooms were added about 1896, as well as ventilated clothes closets. Still later, when outdoor sleeping was advocated by many specialists in pulmonary tuberculosis, two or more porches were provided, instead of one continuous porch, so that patients' beds could be moved easily and directly from their rooms to these several verandas, or outdoor sleeping quarters. The four room type in its latest development is shown in Fig. 1, being the floor plan of a cottage donated by Mr. Elias Asiel of New York. The bedrooms are contiguous to porches and have cross ventilation. The clothes closets have direct ventilation and light. The living room, bath, and toilet receive light and air from porches, as well as direct light from above. The corridor also has a ceiling light and direct ventilation.

The construction of this cottage was begun during the fall of 1916 and the total contract price, as entered into at that time, amounted to a little less than \$8,000.00. To reproduce this structure today, it would be necessary to add at least 100 per cent to the cost. It was for this reason among others, that the directors of the Trudeau Sanatorium decided that the four room cottage had ceased to be an economical type, not only on account of the initial outlay per bed, but because the cost of the upkeep (each one of these cottages has a separate heating apparatus) had reached a point disproportionate to the number of persons housed. It was therefore determined that future cottages ought to contain more patients, even if it were necessary to resort to a two-story structure to accomplish this purpose.

The opportunity to inaugurate this new housing policy presented itself during the summer of 1919, when, under the terms of the will of the late Edward P. Kerbs of New York, the sanatorium came into possession of a considerable sum of money. About four-fifths of this sum was to be expended for the erection of two buildings to house patients, the size of the structures not being stipulated. The architects were thereupon instructed to prepare studies for two-story cottages, containing about ten patients' rooms. After a num-

ber of sketches had been made, a type was adopted which is shown in Fig. 2 and 3; these two cottages are now in course of erection. The plan embodies the salient features of the Asiel Cottage, and indeed of practically all of the cottages erected at Trudeau during the past eighteen years. Every room, even those of secondary importance, receives direct light and air. The corridors are sufficiently lighted and aired by means of a large window on the stair landing. The sleeping porches are quite private, as the entrance porch is to be used for lounging or day-rest only. It should also be pointed out that these new units have been designed to do something more than to provide housing for ambulant patients, for it is intended that they should supplement the functions of the present twelve-bed infirmary, when the increase in the number of patients at the sana-

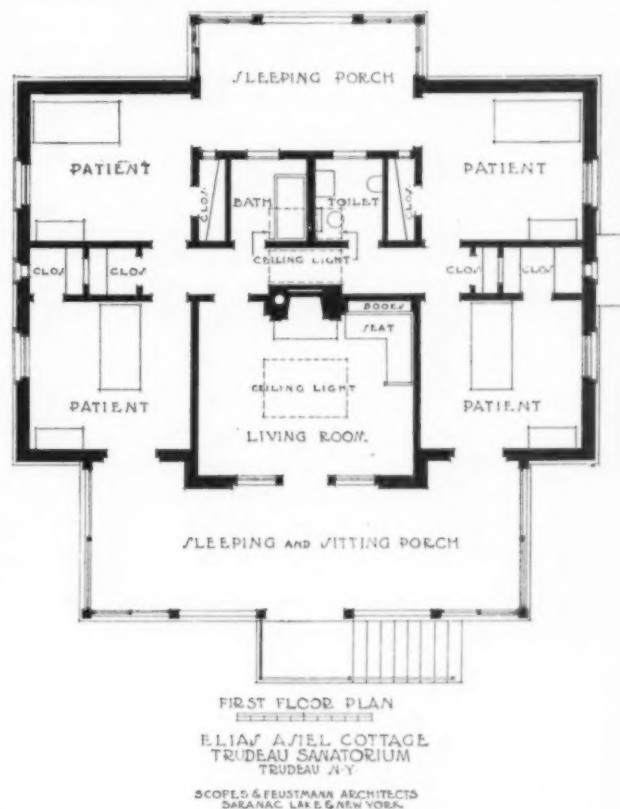


Fig. 1. First floor plan of the Elias Asiel Cottage.

torium makes such a step necessary. A nurse's room, with bath and sleeping porch, has been provided on the first floor; there is also a small pantry near the entrance, where trays can be made up and special diets prepared, so that patients, who

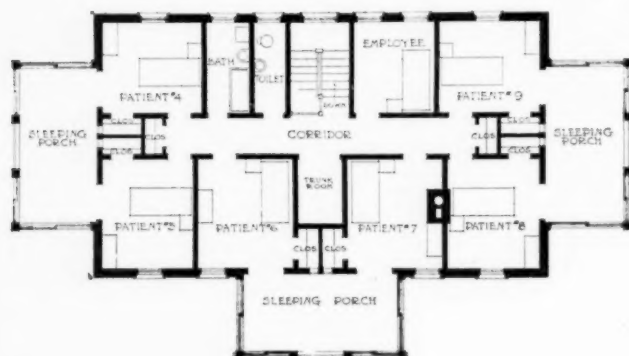


Fig. 2. First floor plan of the Kerbs Memorial Cottage.

are not able to go to the main dining room for their meals, may be adequately cared for in these cottages. An annunciator system will be installed with push buttons in all patients' bath and toilet rooms.

Advantage is taken of the fact that these cottages are placed fairly close to each other (fifty-five feet being the least distance between them) to install for the two cottages one hot water heating plant, and one heater and tank for domestic hot water. These heating units are placed in a high cellar under patient's room No. 3 in cottage No. 1 which occupies lower ground than cottage No. 2. The necessary flow and return pipes, also circulating pipes between the cottages, will be placed in insulated conduits about four feet below grade. It is confidently expected that this method will materially decrease the amount of attendance required for heating purposes.

The construction of the Kerbs Cottages is about the same as has been employed for practically all of the four patient cottages at Trudeau during the past years. The foundation and underpinning are of rubble masonry, the superstructure of



SECOND FLOOR PLAN  
KERBS MEMORIAL COTTAGES  
TRUDEAU SANATORIUM  
TRUDEAU, N.Y.  
SCOTT & FOSTER ARCHITECTS  
NEW YORK

Fig. 3. Second floor plan of the Kerbs Memorial Cottage.

frame, with outer walls veneered with brick. This mode of enclosing has been found to be less expensive than solid brick walls, while the insulating quality of the combination of brick and frame has been found to be higher. The roofs are double and will be covered with slate. The interiors are to be treated simply, and the domestic character of the various rooms will be carried out as far as can be consistently done with this type of housing.

In as much as it has not been possible to contract for all portions of the work, the exact cost of these new units has not yet been ascertained, but it is believed that it will amount to about \$29,000.00 for each cottage, exclusive of furnishings.

### THE COMPOSITE NURSE

In his address at the Florence Nightingale Centenary Celebration, held under the auspices of the American Red Cross at Central High School, Washington, D. C., May 13, 1920, Sir Auckland Geddes, who himself is a physician and therefore speaks as a member of the profession as well as a representative of a great political and social world, described most aptly the mental picture which the word nurse always brings to his mind. A woman, always she is, "rather above medium height, with a somewhat broad face, round cheeks with a glow of health, a rather short nose, good teeth, grey eyes, hair concealed by a white linen cap of sorts, hands rather broad and with the appearance of being much in hot water, feet at least one size larger than is usual in a woman of her height, shoes low heeled and rather out of shape. That is not a picture of any nurse that I ever saw, just the average impression left by the hundreds, perhaps thousands, of times I have watched nurses at work. Round that central figure there are dozens of memories of individual nurses ready to slip into the place of the type nurse if my mind wanders in the fields of recollection.

"Now let me see what are the qualities of this ideal creature. She is competent, neat with her hands, rather unemotional, little inclined to sentimentality, rather short in her way with humbugs but extraordinarily patient and tender with the really sick, brave in times of danger, self-possessed and calm (bombed hospitals showed all that), forgetful of self and fatigue while work has to be done (who that served in France can forget the casualty clearing station nurses when the wounded were pouring in from a heavy action?), cheerful under the most wearing discomfort, rather inclined to gossip, a bit of a hero worshiper (have you ever heard an operating theater nurse on her favorite surgeon?), not very intellectual but extraordinarily observant, prone to talk shop at all times but highly amusing on the foibles of her patients, full of esprit de corps, full of sterling virtues, and, when all is said and done, often the savior of lives for the saving of which the physician got the credit. Without expert nursing, half—no, three-quarters—of the practical value of the scientific knowledge of the medical profession would be lost."

God has so arranged the chronometry of our spirits that there shall be thousands of silent moments between the striking hours.—Dr. Martineau.



## AN EFFICIENT SYSTEM OF ACCOUNTING FOR THE HOSPITAL OF MEDIUM SIZE

BY GEORGE A. PARKER, M.D., MEDICAL DIRECTOR AND SUPERINTENDENT, BUTTERWORTH HOSPITAL, GRAND RAPIDS, MICH.

IN THE following article it is not the intention of the writer to attempt to describe anything markedly different from the more or less established system of accounting for hospitals, but rather to show how much may be accomplished in an institution of 100 to 150 beds, which for financial or other reasons does not employ a considerable force of clerks or bookkeepers.

To begin with, all supplies are bought by the superintendent. With the exception of certain daily orders which are bought locally, the following procedure is used. Requisitions are made out in duplicate and turned in to his office, by the heads of the different departments requesting materials, and, if approved, a numbered purchase order is issued in duplicate, describing the article, stating the price, and such other terms of the purchase as may be included, signed by the superintendent. One copy of the order is forwarded to the firm from whom the purchase is to be made, and the other retained and filed. In hospitals having a central storeroom in charge of a clerk, these purchase orders may be made in triplicate.

### Special Slips for Repair Work

Repair work is always recorded on special requisition slips, which, in addition to the request and description of the work desired, have a space reserved to tabulate the cost in both time and materials used. These repair slips are arranged in a form based on those described in a paper entitled, "The Segregation of Power Plant Costs," by D. D. Kimball of New York, and Dr. H. M. Pollock of the Massachusetts Homeopathic Hospital, which appears in the report of the 1919 Convention of the American Hospital Association. Inasmuch as a storeroom clerk is not employed, the heads of the different departments are held responsible for the proper checking of invoices consigned to their departments, distribution of supplies in their charge, and in addition a perpetual

*In a hospital of one hundred to one hundred and fifty beds which does not employ a large number of clerks or bookkeepers, it is especially important to have a thoroughly efficient system of accounting.*

*This article suggests the main features of a system which has stood the test of practical experience. It includes the buying of all supplies by the superintendent, the use of special requisition slips for all repair work and the issuance of monthly reports. No argument is needed to support the demand for a good accounting system in every hospital, but the cost of supporting such a system should in every instance be in direct proportion to the amount saved.*

inventory is kept, which of course shows the amount of stock on hand.

In the main office one clerk acts in the dual capacity of bookkeeper and cashier, and is therefore responsible for the collection of bills, the management of the cash receipts, and the necessary bookkeeping, which is carried on in double entry. In the "day book," cash receipts, and expenditures from petty cash are recorded. Accounts receivable are

handled as follows: upon admission of the patient an account is opened up on a card, which on one side gives certain statistical data, and on the reverse, shows charges which are entered as they are incurred, together with any cash payments or credits. These cards are of course filed alphabetically, and are further arranged in "open" and "closed" accounts. These accounts are transferred from the cards to the "cash journal," which shows both a credit and debit side. From the cash journal, totals are posted to the ledger, which shows accounts receivable, bills payable, and the value of inventory or stock on hand. The capital or corporation accounts should appear in a separate set of books, which may or may not be kept in the institution office. When the income from invested funds, contributions, and miscellaneous sources, other than those from operation, is comparatively small, and does not require much separate work, the corporation accounts including receipts, expenditures, valuation of buildings, plant, and equipment, may be kept in the same set of books that carry the operating accounts. As a principle, however, this latter procedure would not generally be upheld.

Approved bills payable, which are entered in the voucher register, charged to the departments for which the expense is incurred, appear in the journal as cash disbursements, and are posted therefrom to the ledger. In computing hospital accounts, new equipment, improvements to build-

ings or grounds, insurance, and interest on loans are not included in the maintenance cost, though they are figured in the total cost under the head of corporation accounts. Replacements and repairs are, however, charged to maintenance of patients, and included in the estimation of the per capita cost.

### Reports from Superintendent's Office

Reports are rendered by the superintendent's office for each month giving the following data: administration expense, professional care of patients, food department, housekeeping, laundry, house and property expense, and the total expense. In addition to the above, the cost per hospital days in each of these subdivisions or departments is given.

Appended to this is a statement of earnings from operation, which is divided, showing from which department in the hospital the earn-

ings are made. On another sheet is shown a summary of the total expense to date, value of inventory, corporation expense, operating expense, average cost per day, accounts receivable, cash receipts and a few other items of interest to the particular hospital concerned.

With the exception of a part of the pay roll, which is distributed in cash, and some payments from the petty cash account, all bills are settled by a voucher check, signed by the treasurer of the board, and the superintendent, certifying that the account has been incurred for the benefit of the hospital.

In conclusion, no argument is necessary to support the demand for a comprehensive accounting system in all departments of a hospital. The cost of supporting such a system, however, should be in direct proportion to the needs of the institution, and not in excess of the amount that it actually saves.

## THE MACHINERY OF THE HOSPITAL LAUNDRY\*

BY WALTER TRIMBLE, CHICAGO, ILLINOIS

IT IS a business axiom, that "All inefficiency begins at the top." In other words, no department of a concern will be more efficient than the chief executive of that concern. I quote this because a hospital is, or should be, a business proposition in the very strictest sense of the word, striving for efficiency in every department—including its laundry.

The efficient head of a hospital will see that he has a proficient manager at the head of his laundry department. Besides being a laundry operator, he should have a good working knowledge of both chemical and mechanical engineering, and he should be an expert in selecting and handling his labor, most of which is female. It is no position for a man of the "rough-and-ready" type, but one which should be occupied by a born diplomat. It is hardly necessary to say that in addition to all this, the laundry manager must be absolutely honest, and have the respect and confidence of those above him, as well as of those under him.

### Hospital Laundry Machinery

What will be said about machinery at this time will be intended not for the laundry manager, but for the general information of those members of the hospital's executive staff who may not be altogether familiar with laundry equipment. With one or two exceptions which will be pointed out

later, hospital laundry machinery is the same as is used in the commercial laundry. The machinery of a power laundry is both complex and varied, as to type. In a hospital, the power plant is nearly always independent of the laundry, so it is not within my province to discuss it. However, it is an important adjunct, as the laundry must have plenty of steam at the right pressure, and water at the right temperature, in order to operate as it should; and of course the power must be constant. The hospital management must see that the en-



(Underwood and Underwood.)

Fig. 1—Large Metallic Washing Machine.

This is driven by a direct-connected motor. The large hood above the machine catches the steam and heat that arise and this is sucked up by an exhaust fan.

\*This is the third of a series of articles on the Hospital Laundry. The first and second articles appeared in the November and December issues.



gineer does his duty, as usually he is not under the jurisdiction of the laundry manager.

Strictly speaking, the work of laundering begins with the washing, although this process may be preceded by sterilizing, marking, and classifying the goods. But in order to avoid confusion, it is best to pass over these subjects for the present, and begin with the equipment of the washroom.

### The Washing Machines

All laundry washing machines operate on one principle, although their constructional details vary in a great many ways, and their sizes and capacities also differ. The power washing machine consists of a cylindrical water-tight outer shell, in which revolves forward and back a perforated cylinder. The fabrics to be cleansed are

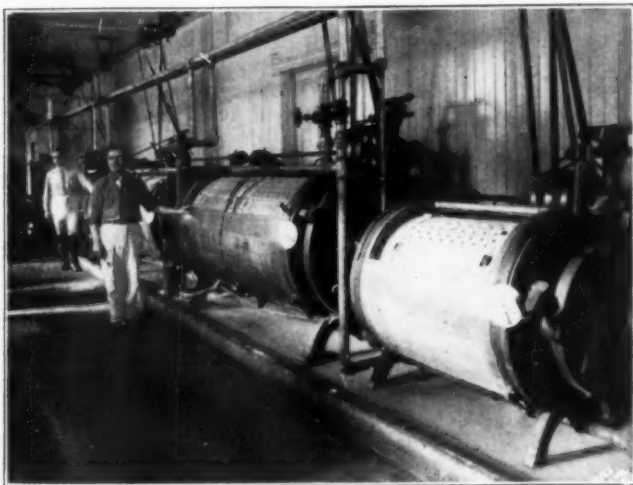


Fig. 2—Wooden-shell Washing Machines.

These machines are belt-driven. They have no steam lines leading to them, so they draw their hot water supply from a large storage tank, of the closed type.

placed in the latter, and the bath enters through the perforations and saturates the goods. The washing is done by agitation, not by rubbing. Fig. 1 shows a large all-metal washing machine, which is driven by a direct-connected electric motor, the "panel-control" system being used—a very ingenious method, which will be illustrated later. These metallic washers, of which there are several makes, are of comparatively recent development, and they offer several advantages which the wooden washers do not possess. They are very expensive, it is true, but the matter of cost is offset by their long life, their rapidity, their ability to do the work of three or four ordinary machines, and the excellence of the work they do.

Fig. 2 shows a row of wooden-shell washing machines, which are the kind quite generally used at present, although in many plants they are gradually being superseded by the all-metal machines. These washers have one excellent new feature,—they are equipped with ball bearings,



Fig. 3—Large Over-driven Extractors.

These huge motor-driven machines have a large capacity and they are very efficient where there is a large volume of work. There are no belts to give trouble, which is an advantage.

which effects a saving in power consumed, a matter that is of no little importance where the cost of fuel or electric current is high. These two pictures will give the lay reader a good idea as to the washing machine and its construction. The washing processes used and the materials which enter them will be discussed when we come to the matter of methods.

### The Extractor

After the "load" of goods has been washed, the excess water is removed by an extractor (called by the English a centrifuge), which has superseded the old-fashioned rubber-roll clothes wringer. All extractors are similar in principle, although they differ in constructional details and size. There is an outer shell, made of metal, in which revolves at a very high rate of speed a perforated basket, made of brass or copper. The wet pieces are transferred from the washer to this machine, and nearly all of the water in them is thrown out by centrifugal force.

Fig. 3 shows a line of over-driven extractors. These are large-capacity machines, for use in very large flat work departments, and in other cases where a large load must be handled. They are electrically operated, the motor being at the top of the vertical shaft which extends through the basket.

Fig. 4 shows a line of under-driven extractors, with individual motor drive. In these machines the baskets have no upper bearings, as have the over-driven type, and therefore spin on a bottom bearing, after the manner of a top. In this picture is also shown a washing machine, behind the man. The little box-like machine in the lower right-hand corner of the illustration is a dampening machine. By means of air pressure, water is made into a fine mist, and when a



Fig. 4—Row of Under-driven Extractors. These extractors are motor-driven, but they are not direct-connected. This view shows a section of the starched-work department of a very large hospital laundry.

starched garment is dipped into this, it comes out dampened and ready to be ironed. It will be noted that the women are dressed in overalls—a very good plan where there is moving machinery.

After the washing and extracting, flat work is ironed, without either being starched or dried. Other articles are either dried in a heated dryroom or in a heated tumbler. These machines will be described in my next article.

\* \* \* \*

### Questions and Answers

"Is it right to bleach in the suds?—Kentucky."

No. The best chemists disapprove of bleaching in the suds. While many laundry operators do not at this time agree with the laundry chemists, the more advanced thinkers now admit that the scientific men are right.

"What causes my flat work to take on a grayish color?—Indiana."

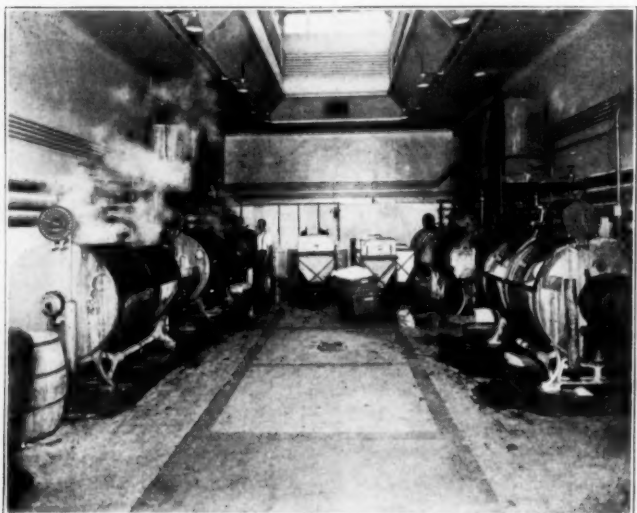


Fig. 5—Section of a well lighted laundry with ample working space.

It is impossible to determine this unless you send a sample of the goods. It is very probable that lime soap is the cause, as you are located in a hard-water section. A hot acetic bath will remove the lime soap, but unless you install a water softener the trouble will recur.

"How can one remove blood stains?—M. J. M."

I presume you refer to old blood stains, because recent blood stains are removed in the ordinary washing process. If the stain has been "boiled in," try javelle water. If this will not take it out, try a prolonged treatment with strong ammonia, followed by an oxalic acid bath. Be sure to rinse thoroughly. Sometimes medicine stains are mistaken for blood stains, and consequently they are given the wrong treatment.

### RATES OF COMPENSATION SATISFACTORY

Comment has been very favorable to the new medical and surgical fee schedule, in operation since June 1 in Ohio, and the hospital schedule effective a month later, both under the Workmen's Compensation Law. More adequate provision for medical services is stipulated in the new schedule, and cooperation with those who have claims against the State industrial Commission is being readily accomplished.

The new rates of compensation to hospitals, which were decided on in agreement between the Industrial Commission and the Ohio Hospital Association at their annual conference in Columbus recently, are based on the operating cost per day for the last calendar year. The Commission requested all hospitals to submit full data, including annual reports, and at the same time send them a copy of the new plans and a request to make out blank contracts which were to be properly filled in, certified, and returned. Hospitals failing to do this will have to be satisfied with awards for service not in excess of \$14 per week for ward service and \$18 per week for private room service, without remuneration for any extras. Since operating room service, hospital anesthetists, drugs, laboratory or x-ray services are figured in the per diem cost per patient, they are not to be filed as additional charges.

### COURTESY COSTS LITTLE

What are the greatest hospital assets today? Everyone would disagree on some points, but there are some on which perhaps we could all agree. First, there is courtesy and cheerfulness. Have the switchboard operator answer all inquiries politely, accurately, and respectfully, for she does not know who it is on the other end of the line. Have the records for outgoing information up to date and simply arranged. Be careful not to have conflicting reports given out, if you wish to retain the public confidence. To insure accuracy of information, detail certain people, only, to give it. Treat all entrants of the hospital politely, no matter what their standing or business may be. In the wards, in addition to the quiet and order which of course are essential, try to foster a spirit of friendliness among all patients and workers. Fight the hospital's differences behind sound-proof walls and closed doors. Make it understood that it is not necessary to shout at the foreign born; he does not understand any better. Try to gain the good will of everyone, and learn to regulate your power.



## HOSPITAL ORGANIZATION WITH SPECIAL REFERENCE TO THE MACHINERY OF GOVERNMENT

By WILLIAM EVERETT MUSGRAVE, M.D., DIRECTOR, UNIVERSITY OF CALIFORNIA HOSPITALS, SAN FRANCISCO, CAL.

THE fundamental principles of hospital organization are essentially those of good business organization of any other kind. There are varieties in function, and other compelling influences that must be recognized, often to a degree that makes each hospital an individual problem. Any discussion of the subject of organization, therefore, should specify the type of hospital under consideration and must perforce disregard the many unusual situations peculiar to local communities.

This paper deals with the ideal complete general hospital, which I defined in a recent article as: "The minimum requirements for a modern hospital are that it shall be located, constructed, equipped, organized, financed, and personneled, to supply all the facilities and render all the complex services required by modern medicine, including physical, social and mental ills; and at the same time to furnish the facilities for training new workers in all the special fields covered by its activities.

"The modern hospital is a great public utility, the combined school and workshop of modern medicine; a community health center in all that the name implies.

"As a workshop, it uses the most precious material, employs the greatest variety of implements, and calls for the services of master craftsmen of many specialties. The hazards are great, every day is twenty-four hours long and service must be as free from error as it is possible to make it. Love of service—practical everyday idealism—must be the constant watchword in every hospital, and dividends paid in soul satisfaction must be prized as of great wealth."

### Stockholders

In conceiving and planning a new hospital or in reorganizing one already in existence, the first effort is to focus all interests upon the creation and perpetuation of its governing body. These inter-

*Hospital organization has the same fundamental principles as business organization. Any discussion of organization, however, must specify the type of hospital under consideration as problems vary to no small degree with the different types.*

*This article deals with the ideal general hospital, which should be organized "to supply all the facilities and render all the complex services required by modern medicine." The hazards of its work are great, and its material very precious. It is a great public utility, whose work must be as free from error as it is possible to make it, and whose constant watchword must be love of service — practical everyday idealism.*

ests may be religious, fraternal, state, university, community, or private. Frequently they represent several different influences and sometimes they are political. In most private plants, the owners or investors are stockholders, as would be the case in any other business. Whatever they are, there must be enough organization to insure careful selection and perpetuation of a good board of directors, or trustees, or both, and

to maintain a healthy body of friends for the institution. The owners, stockholders, or other group of interests behind the hospital should hold one or two meetings a year to fill vacancies on the board of directors, hear reports, and stimulate their own interest in the progress of their work.

### Board of Directors or Trustees

A legislative policy, and general governing board of seven or nine members, or a somewhat larger body with an executive committee of three or five members, is the foundation upon which good organization must rest. The personnel of this board should be made up of outstanding citizens who command the respect of the community, take a keen interest in civic matters, take their responsibilities seriously, discharge their duties faithfully, and are not sectarian in the general aspect of that word. No member of the staff or other physician in active practice should be a member, but medically trained men not engaged in practice often are most valuable directors. Political, social, religious, and even financial affiliations should be carefully considered before appointments are made, and no one whose selfish interests are involved (except in private hospitals) should be appointed. Generally speaking, boards should not be self-perpetuating, and on the other hand, provision to safeguard the electorate should be made.

Methods of selection must depend somewhat upon the interests fostering the hospital, which may be the regents of a university, the trustees of

a foundation, state or municipal officials, the governing body of a church, the managers of some supporting society or corporation, the stockholders in a private hospital, or the general public, in a community service institution. Wherever possible, selection should conform as closely as may be to election by stockholders, owners, or representatives.

If the hospital is a community institution supported by the public, it is an easy matter to incorporate upon a non-profit-making plan. Contributions may be expressed in non-dividend bearing stock certificates of a fixed par value. This not only provides an attractive way to raise funds, but it establishes a definite and safe electorate for a board of directors.

### Organization of the Board

The organization and duties of a board of directors approximate those of other sound businesses. The usual officers and committees are to be provided. Committees should not be too many in number, their membership should not exceed three to five persons, and their duties should be outlined. All committees, except the executive, should be advisory in character, both to the board and to the chief executive officer. No greater danger can be created in any hospital, than for its board to have numerous committees with executive power, discharging managerial duties. This point ought to be stressed because of its prevalence, and because of the injury it works in so many otherwise good institutions.

The auditor for the corporation should be a non-voting member of the board, or at least should be in attendance at all meetings. He should have authority to conduct irregular or "running" audit, in addition to a required complete semi-annual report on the financial situation.

The distinction between accounting and auditing should be kept clear at all times, accounting being definitely a managerial function. One of the most difficult situations encountered in hospital organization, and particularly in reorganization work, curiously enough, is in separating these two entirely different functions.

The attorney—and every hospital should have a good one—should be a non-voting member of the board and attend all its meetings. The importance of the attorney's work and the multiplicity of his problems are increasing very rapidly in hospitals. This is due to many causes, such as the constantly increasing complexity of hospital functions, the increase in the use of dangerous special utilities, the development of general and special laws governing the practice of medicine, particularly those tending toward socialization, the greater knowledge on the part of the public, not

only as to what constitutes their legal rights, but a knowledge of whether or not these rights are being properly safeguarded, and the tightening of legislation in the interest of better medicine.

The treasurer of the corporation may be a member of the board, or at least should attend its meetings and make his reports to them. A responsible officer of a bank makes a highly desirable treasurer, and his institution may be made trustee or custodian of all funds and financial papers.

The managing director, director, or superintendent of the hospital should be a non-voting member of the board, and its executive officer.

The financial duties and responsibilities of the board are custodial, ways and means, operative and educational. The custodial function includes all realty, endowments, bequests, trust funds, and all other assets of whatever character. In many hospitals this responsibility is divided with a separate board of trustees, a mistake, for so many reasons that time will not be taken to discuss the point, further than to say that the divided responsibility may prove troublesome. It is more or less immaterial what name is given to the board, but except for special reasons harmony and efficiency are more often secured when there is only one authoritative body. This function also includes purchase, sale, mortgage, expansion, building, repairs, and upkeep. Ideas regarding hospital construction are constantly changing, and directors find it difficult to hold to a sound developmental program which must be part of their policy. For this and many other reasons, an architect should be an element in every board organization. In planning a new hospital he should be selected carefully, selected early, and consulted with frequency. In reorganizing an existing hospital the appointment of an architect should be arranged for. It takes three types of expert service to construct or remodel a hospital. These are authoritative representation from the board, the architect, and the hospital administrator. In many instances the building of a hospital is made possible by society interests, and frequently these are carried into the plans. Medical economics is a specialty which must be recognized more generally than it is at present, before we can be made to stop building architectural frills and inefficiency monstrosities, and labeling them hospitals.

### The Boards Most Difficult Problem

The ways and means duties of the board constitute its most difficult problem. It includes securing endowments, bequests, and the raising of funds of whatever character, for whatever purpose, and laying down policies governing their expenditure. Most hospitals are "under financed and over expended." Many of them are bankrupt,



and in the majority the funds are pathetically inadequate to meet the legitimate costs of the service they attempt to render. The result is desperate attempts to save, even where saving is at the expense of efficiency, with all the demoralizing effects in appearance, spirit of service, and criticism entailed in such a situation. The time is not far distant when the public will not submit to hospital conditions that give even healthy people the impression of a cheap rusty hotel, with its bad odors, frayed rugs, scratched walls, rickety furniture and general run down appearance. Boards of directors should not permit a hospital to attempt more work than their finances will justify being well done. It is their duty—their first and most important duty—to raise funds sufficient to carry out their approved program. If this is not possible, they should adjust the program to meet their finances, even if it involves closing of the hospital.

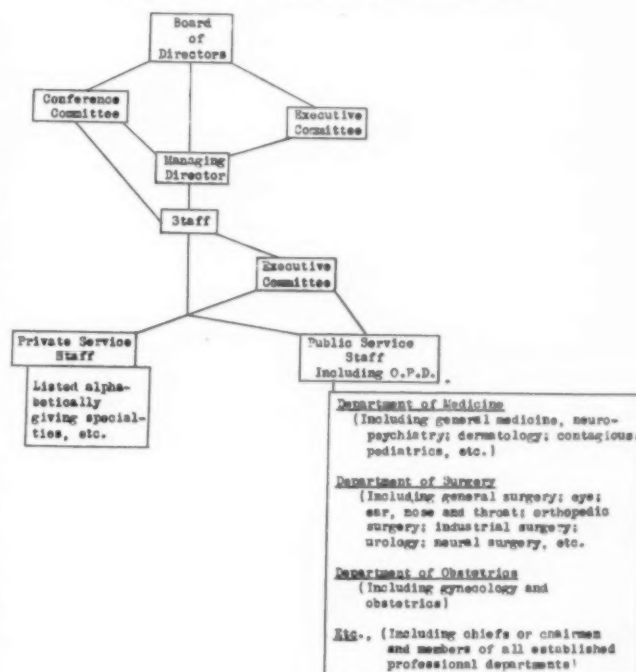
Policies regarding both operating costs and operating income are distinctly board functions. The execution of the policies, however, is just as distinctly a managerial function. Overzealousness by board or committees, and their usurpation of managerial duties is responsible for the bad name and inefficient management of a great many hospitals. An experienced administrator will not, of course, submit to such an invasion of his prerogatives, and therefore hospitals operating under such a policy can secure only a "rubber stamp" kind of an executive. This point is worth stressing, because it is both a prevalent situation and one difficult to correct.

Unfortunately even in our great medical teaching centers much education must be carried out among governing bodies before they will appreciate either their full duties toward their hospitals, or the hospitals' correct relation to their other educational departments. Until this is done, until directors of more educational centers can be brought to visualize their hospitals as educational departments, whose officers are teachers of a medical specialty, training more of their kind, and whose governing authorities are as actively interested in developing the hospital as they are in any other laboratory, the outlook for rapid improvement in hospitals in general is not particularly bright. Fortunately, some of the leading institutions are awake to the importance of this situation, and they soon will be turning out the vanguard of the new order of hospital executive, just as they years ago took the lead in turning out the modern diagnostician and physician. At the same time they will be creating the literature and setting the example of what hospital boards of directors should be. Even laymen are rapidly becoming educated to realize that medical education

is not "pure science," that research does not necessarily mean test tubes and guinea pigs, and that the art of medicine, medical economics, and above all "service," itself, are parts of both the educational and research fields. These are promising fields that are about to be discovered again.

The appointment function of a board of directors is important both in what to do and what not to do. The selection of a director or superintendent is exclusively a prerogative of the board. Chairmen or chiefs of staff departments should be appointed by them upon nomination of the executive committee of the staff. All other staff members should be nominated by the chairmen of departments, approved by the staff or its executive committee, and appointed by the board. All other officers and employees should be appointed or employed by the director of the hospital.

DIAGRAM OF STAFF ORGANIZATION



Legislative and general policy functions should be built up by written resolutions of the board, until an established line of conduct has been provided for most of the very numerous problems of policy with which every hospital is confronted. Such resolutions should be given publicity as issued, and when complete enough, they may be published along with other rules and essential data as a handbook of the hospital. The board should not concern itself with rules and regulations of internal management, these belong in the province of the director. More general questions, covering any or all departments, and particularly those having contact with other organizations or the public, should have the board's attention.

Contact policies with other institutions and or-



organizations are a difficult, and, at the same time, an important function of a governing board. These agencies are of every conceivable variety in function, organization, management, and finance. All of those worth while, and whose field belongs in better health, should work with or through the hospital, either in an understanding spirit of cooperation or by affiliation. Our definition of a hospital cannot be fulfilled by intramural work, however efficient, and no really worth while hospital can discharge its full duty without an extensive plan of cooperation with other health agencies. To bring this about requires a broad understanding among board members, and tireless energy and tact by the board, staff, and all other officers.

### Hospital Has Educational Function

The board of every good hospital should recognize an educational function. Responsibilities in the development of interns, nurses, technicians of several varieties, social workers, public health nurses, hospital executives, and even in assistance to younger members of the visiting staff, are important duties which should be fostered in every possible way by the governing body. In our great teaching hospitals attached to, or forming part of the machinery of medical education, this function is equally important with that of undergraduate medical instruction. Except in a very few of our leading and progressive centers, this fact has not been fully appreciated and programed along with other essential features of education. It is distressing to see in this day of enlightenment teaching hospitals developing in the minds of future physicians only an ultra "test tube" kind of science, to be practiced on "cases," neglecting the great art of healing, and the teaching that improvement in service among God's stricken creatures is the most uncultivated and promising field of research in all the broad program of medicine.

Our teaching hospitals train future physicians to rely upon fine laboratories, x-ray plants, and other expensive facilities, and upon the expert assistance of specially trained executives, technicians, nurses, etc., as part of their armamentarium in diagnosis and therapy. Is it any wonder that so many of them fail when they get away from this expert assistance and expensive equipment, and come into contact with the world as it is? Is it not obvious that, if we are right in training physicians to recognize expert assistance as a necessity, it is our duty to educate these assistants in the only place in which they can be educated—the teaching hospital? Certainly but very few of our teaching hospitals are discharging a full duty in this respect. They are bidding against each other in many technical fields, in order to se-

cure the services of the comparatively few well trained executives and trained technical assistants, while the great majority of hospitals must do without them. This condition will be corrected only when more governing bodies of teaching hospitals recognize their responsibilities toward their hospitals as part of their teaching machinery, instead of considering them expensive nuisances.

### Hospital Committees

The number and variety of auxiliary boards and committees is essentially a board problem. Some are advisable, and possibly a few necessary, not so much for the working of the hospital as for establishing cooperative contact with other agencies and with the general public, and thus increasing the usefulness of the hospital. All such committees should be advisory in character, and the personnel should be scrutinized with the same care that is employed in selecting board members.

A woman's auxiliary board working with a tactful director, can be a remarkable asset to a hospital. Certain of the institution's activities are well delegated to such a board and there are social and other internal questions where their counsel and help is of the greatest value. The president of an auxiliary should be a member of the board of directors. Mistakes in the personnel of an auxiliary can cause much harm, and election to membership should, therefore, be made with dignity and after mature deliberation.

An executive committee of not more than five members and with the usual duties and authority of executive committees should be part of the board's organization.

The necessity for other standing committees varies with the scope and program of the hospital. As a matter of policy, the fewer the committees the more successful the organization. In the very nature of good organization and system the president can appoint special committees to consider special matters as they come up. All committee reports should be in writing. Certain necessary contact or "bridging" committees are discussed below under staff organization.

### The Hospital Executive

By whatever title—managing director, director, manager, superintendent, or what not—the chief executive is the most important factor in any enterprise, whether organized for hospital, social, or business purposes. One of the troubles in many hospitals is the tendency to engage as "superintendent" some inexperienced person, or one who has made a failure in some other line of work and must be "taken care of." Frequently these "superintendents" are paid a pittance and as-

signed the duties and responsibilities of a clerk, while the hospital shakes itself to pieces under the "management" of a board, with a host of committees that meet semi-occasionally, and usually know little or nothing about hospital problems.

Success as a hospital administrator is dependent upon the same qualities that insure success as an executive in any other field, plus some special attainments in the peculiarities of hospital work. These qualities are appropriate general and special education, experience, an inexhaustible fund of tact and patience, unusual sense of relative values, tireless industry, enthusiasm, a clear judgment of things as they are, and a vision of things as they ought to be. The ideal hospital executive has both a medical and a business education. There are some splendid men, who have won national reputation in the work, who are not physicians, but there can be no question but that medical training adds to the value of any hospital executive, and for the great teaching centers such training is necessary. In non-teaching, semi-commercial, and certain types of special hospitals, a medical training is less requisite, and in the smaller plants it usually is out of the question for financial reasons. Neither medical education, nor business training, nor both in combination, can prepare one for hospital work. There must be a certain personality, and a considerable apprenticeship must be served with leaders actually engaged in hospital work on a large scale.

The director should be selected and appointed by the board of directors. He should be their mouthpiece in all matters, and of course should be solely responsible to them. He should attend all meetings of the board and of all important committees. He should not be engaged under "contract," nor should there be any "security of tenure," except that assured by his successful work.

#### Duties of the Executive

The duties of a hospital administrator cover a very wide range of activities, and he must have a working knowledge of each of them. The chiefs of departments and services should meet frequently with the executive in conference, and each of them should have free access to him at all times. In smaller hospitals this is easy of accomplishment, and it is even easy for the administrator to keep in personal touch with all the details of every department. In larger plants, however, most of the detailed work must be left in the hands of trusted assistants, while the chief executive gives his time to conferences, consideration of policies, and to harmonizing, coordinating, and stimulating the work of all departments. Roughly speaking, the director may divide his at-

tention between administrative, public utility, professional, teaching, and research activities within his own organization, and have plenty of his time and interest centered in methods of contact with other health and welfare organizations, and with the public interest in all sorts of health questions.

#### Administrative Problems Varied

The administrative problems are of great variety — purchasing, property, supplies, power plants, heat, light, water, ventilation, alterations, repairs, new construction, plumbing, painting, laundry, kitchens, diet kitchens, insurance, rents, interest, accounting, records, office work in general, banking, financing, nursing, housekeeping, and dozens of other activities, all of importance in hospital success.

Of public utility problems there may be mentioned operating rooms, x-ray plants, radium, clinical, pathological, and other laboratories, electrocardiographic, mechanical, and other modern difficult and expensive parts of diagnosis and treatment.

The problems of the professional department and staff require constant, sympathetic, intelligent interest and support. Staff organizations do not hold together without effort, and the best work is done by staffs, interested in and practicing team-work. Conferences with staff organizations, boards, and committees, require a great deal of time and thought. It is all necessary and worth while, because continued advancement and progress may be had only as all interests go forward together, and the hospital as a whole is just as good as its weakest department.

The wise administrator will interest himself in all public movements, having better health as part of their program, and he will make an earnest effort to work in close cooperation with all such movements. Perhaps in a greater degree than other persons, the hospital executive sees the waste that goes on about us all the time by the inefficiency, overlapping, and what not, of "organizations," "interested" in various phases of the better health program. He sees these things from near at hand, and it requires no little tact and judgment to establish and maintain the right contact with them all.

#### The Staff

A carefully selected, organized, team-working staff is a fundamental requirement of any hospital, and at the same time the one least frequently seen. A loosely appointed "paper" staff holding indifferent, infrequent meetings constitutes a dangerous situation—dangerous alike to the staff, the hospital, the patients, and to the cause of better



medicine. It is easily avoided in new organizations, and extremely difficult to correct in reorganization of old institutions.

Nominations to the staff may be made or approved by the staff or its executive committee, but all appointments must be made by the board of directors. Obviously, only physicians of ability, integrity, industry, and deep interest in better medicine should be made staff members. Hospitals must get away from a custom all too prevalent under which staff members are selected more upon grounds of social, political, or public popularity, than upon those of professional merit. Staffs consisting in a political combination between the physicians and the hospital, based upon mutual exchange of patronage, have no place in the better hospital and better medicine movement.

Every staff member in a good hospital is an active working officer of the institution. There must be mutual interest and responsibility, based upon mutual confidence and loyalty. There should be an agreement that records shall be kept, unnecessary surgery avoided, accidents and other hazards reduced to a minimum, laboratory, x-ray, and other diagnostic and therapeutic facilities used to their greatest advantage, the simplest of successful remedies employed, and methods and procedures standardized as far as feasible. They should agree that assistants, interns, nurses, and employes be trained in efficient economical practice; incompetency, charlatanism, and cultism be combated by all legitimate means, and the humanities, art, and idealism of medicine be promulgated for the better care of the sick and an influence for better health in the community.

### The "Open" Versus the "Closed" Staff

The "open staff" versus the "closed staff" for hospitals always has been a difficult problem, and with the better hospital movement well under way, is receiving an extra amount of discussion at the present time. Also, a part of the discussion is the question of "limited" versus "unlimited" staff membership. The unlimited "open staff" hospital has been more appropriately named a "hotel for the sick," where both the physicians and patients are guests. The "open" staff usually includes "farming out" of x-ray, laboratory, and other important utilities. There usually is an *a la carte* atmosphere about these hospitals, and, earnest efforts for the constant improvement of medicine are not featured. The only real reason why a staff should be any more "open" than the kitchen or the office, or why it should not be restricted to the necessary number of good physicians to make its work well rounded, is because no worthy physician should be denied hospital fa-

cilities, and all physicians should have equal opportunity in the use of these facilities. In large cities with many good hospitals this is not so serious a problem, but in smaller towns with one or a few hospitals it becomes a problem of the first magnitude.

### Possible Solution of the Problem

The League for the Conservation of Public Health, in its hospital service work now being actively conducted in all parts of California, has adopted a program which gives to each hospital the advantages of a "closed" institution without denying any worthy physician a place on the staff. Explanation of this system is shown in the following copy of a staff organization and staff appointment blank of a San Francisco hospital.

#### STAFF ORGANIZATION OF HOSPITAL

Exclusive of emeritus members and consulting staff, there are two classes of staff members of ..... Hospital:

##### The Private Service Staff:

1. Any physician who is acceptable to the executive committee of the staff and the board of directors of ..... Hospital may be appointed a member of the private service staff.
2. Members of this staff share all the privileges and responsibilities of any other staff member, as applied to their private patients.
3. It is expected that members of this service will conform to the requirements set by the national and state organizations aiming at hospital standardization, and will conform to all policies and regulations of the hospital.
4. Admission of patients to ..... Hospital is limited to its staff. Physicians not on the staff may be extended the courtesy of the hospital, by the superintendent, pending consideration of their applications for membership on the staff.

##### The Public Service Staff:

1. This staff is constituted to care for all hospital, clinic, and teaching patients who have no private physician, and who are unable to pay a private physician for his services.
2. This staff is divided into appropriate divisions, departments or services. Each division will have its chairman, members, and assistants, and other elements of a staff organization.
3. Members of this staff, as in the case of the private service staff, are nominated by the executive committee of the staff and elected by the board of directors of ..... Hospital.
4. A physician may be a member of either or both staffs.

The form of staff appointment is as follows: "Reposing confidence in the integrity, professional attainments and practices of Dr. ...., he is hereby appointed a member of the private service) or (public service) staff of said ..... Hospital, for a period of one year.

"It is understood and agreed by the parties concerned that this appointment carries with it mutual responsibilities and obligations in all movements for better hospitals and better medicine. Actions taken by the hospital in furtherance of this plan shall be mutually binding upon all departments and persons connected with the hospital."

Under this arrangement, the physician interested principally in his private patients has, for this purpose, the same standing that any other staff member has.



The public service staff handles all clinic and all charity and other part paying and teaching patients. This staff must have one or more members representing each specialty of medicine, including anesthesia, pathology, clinical microscopy, and röntgenology; divided along the usual lines of cleavage between specialties. This staff must act as a team-working group, handling efficiently, within its own membership and within the walls of the hospital, all the complex problems of diagnosis and treatment. Most clinic and public service staffs actually do practice "group medicine," which is one of the reasons why the poor undoubtedly get better care in most hospitals than do patients who are able to pay. "Group medicine" is expanding so rapidly in the private practice of medicine that the new problems dependent upon such work already are demanding the serious attention of hospital administrators.

#### Organization Important for the Staff

Organization will prove not only useful to the staff in its own work, but will insure proper contact with the board of directors, the executive, other departments, and with the public. The organization should consist of the usual officers and committees. There should be stated meetings, with some provision to insure attendance as a duty. The entire staff should meet at least once a month, and the "public service" staff should meet more often. In large teaching institutions weekly department meetings of the public service and teaching staff should be the rule. The hospital should make provision for all meetings and the director should be present. Meetings frequently are made more attractive and interesting, and better attendance assured, by having in the hospital a staff luncheon-club. This club should have a conference room for the entire staff, and one or two smaller rooms for committees. There should be arrangements and service for luncheon, for which a nominal charge may be made. It is desirable to have the clinical record department adjacent to these club rooms. When this is not feasible, records requiring attention of staff members may be kept in classified files in the club, so that a busy member of the staff may give them the required attention with a minimum of inconvenience.

The staff should have an executive committee with pretty broad powers to speak and act for the entire body. A suitable membership would be the chairmen of the major "public service" staff departments, and one or two elected members from the "private service" staff. The director should attend all meetings and may be a member of the committee.

Satisfactory contact between the staff and man-

agerial departments requires thoughtful planning and liberality in execution. Not infrequently disharmony is caused by a feeling on the part of the staff that they have too little voice in many matters, while on the other hand the board of directors, may feel that staff members are over ambitious for administrative authority. The basic principle which must obtain is that the board of directors, being charged by custom and law with full responsibility, must in the end have final authority in all matters. However, the wise board will follow as far as possible the wishes of the staff in all medical matters, and will offer careful and tactful explanations when this is not possible. It frequently is difficult for a staff to agree among themselves and stay agreed upon important questions of policy or of details, and consequently it often requires time to get specific wishes, representing united medical opinion, before a board of directors. A conference committee is of distinct value in this, as well as for proper handling of the many questions of mutual interest and importance to the staff and the governing body. Such a committee may very well form one of the standing committees of any hospital. Its membership may well be *ex officio* the combined executive committees of the board and the staff.

Further consideration of the subject of this paper leads at this point to discussion of the organization, contact relations, duties and responsibilities of the some fifteen to twenty major functional departments required to operate a complete general hospital. Adequate discussion of these departments would require several additional articles.

#### REPORT ON NURSING EDUCATION

In October, 1919, under the auspices of the Rockefeller Foundation, a Committee on Nursing Education was organized, under the chairmanship of Prof. C. E. A. Winslow. The committee was asked to study and report on education for public health nursing. Its scope was later extended to include a broader study of nursing education in general, including training for private duty nursing, and institutional teaching and administrative positions. The committee now consists of eighteen persons representing physicians, nurses, and lay persons identified with public health work. During the past year two lines of study have been pursued: first, the study of public health nursing, activities carried on by nurses and by persons other than nurses, with a view to judging the caliber of the work, and the training best fitted to prepare for it; and second, the study of the training afforded by hospital training schools, and by graduate courses for public health nursing. In both fields it has of course been necessary to make a representative and intensive rather than a broad study. Typical communities, rural, small town, and city, have been reported on, and the training schools of representative institutions have been chosen for observation. The final judgment of the committee will be based on an analysis of all the facts, gathered from the various fields of nursing.

## THE HOSPITAL SHIP "RELIEF"

BY R. C. HOLCOMB, COMMANDER, (MC), U. S. N., UNITED STATES NAVY YARD, PHILADELPHIA, PA.

**T**HE *Relief* is a hospital ship of approximately 10,000 tons displacement, 483 feet in length and 60 feet in breadth. She draws about 19 feet of water, is of twin screw type, an oil burner, having turbine engines, and is completely equipped as a fleet hospital and medical supply depot.

There are nine deck levels, six of which are wholly above the water line. Were these decks on the same plane they would constitute a building one-half mile long, and some sixty feet wide.

Being an oil burner she is free from the dirt and dust which is incident to coaling ship. Her fuel capacity is large, much more than sufficient to steam across the Atlantic and back. Her total fresh water capacity is more than 800 tons. She has sixty-four water tight compartments so that she is practically unsinkable, as this term is applied to ships.

Her decks are wide and spacious, and have room for 146 swinging cots. Her extreme hospital capacity for sick in the wards and rooms is five-hundred beds. She thus takes rank among the largest metropolitan hospitals, in fact, there are only about thirty-one hospitals in the United States of five hundred or more beds.

In addition to her hospital capacity, she carries in her hold a complete brigade hospital equipment consisting of tentage, beds, medical and surgical supplies, and even including motor ambulances. This would make it possible in case of an epidemic in the fleet or the landing of a naval brigade, as occurred in connection with the Vera Cruz incident, to establish a base hospital or auxiliary hospital to meet the emergency.

### Need for a Hospital Ship

An idea of the use of a fleet hospital ship may perhaps be better understood if one will imagine the fleet as a large municipality afloat, consisting of from thirty thousand to sixty thousand souls living on an unsteady platform, moving from climate to climate, amid the constant hazard of machinery. Here she takes the place of the metropolitan hospital, ready with a trained staff to care for any type of morbidity or injury, encountered in any part of the globe. She likewise acts as a fleet medical supply depot, filling emergency requisitions for medical or surgical supplies, and offering an out-patient service for co-operative diagnosis and treatment, to the medical officers of the fleet who desire the assistance of her laboratories. She also offers an x-ray department, and another for the treatment of the eye,

ear, nose and throat. Each battleship is furnished with a fine medical department which will meet all the demands of average morbidity, and this the hospital ship in no way supplants; nor does she take the place of the splendid shore hospitals of the Navy which, with the grounds for convalescents, and free from other repressions of the sea, fill a place in the treatment of the sick to which the hospital ship can never aspire. But as a unit of the fleet organization, of that great mobile, and floating city of fighting men, she is capable of moving with them, taking a place as a fleet auxiliary, as do the colliers, the supply ships, repair ships, etc., and in this capacity she tends to make the fleet more self sustaining. Provided with an up-to-date and complete equipment, she gives assurance that, by virtue of his occupation, no seaman shall be deprived of the advantages of medical care and treatment enjoyed by his brother on shore.

### Plan of the Ship

In the hospital department there are fourteen wards, and fifteen officers' rooms. Four of these wards which are arranged for treatment of contagious disease, are well aft on a superstructure, and can only be reached by elevator. This makes them truly isolated, and, as a ship at anchor usually rides bow to the wind, this group will always be to the leeward of the rest of the ship. Each ward has its toilet, and a spacious deck outside. The pantries are fitted with an electric range, utensil sterilizer, and other modern pantry equipment. From the contagious department there is a chute to the loading room of the disinfectors, of which a battery of two is provided. There is also provided a disrobing room, shower and bath room, and dressing room, where patients may be prepared for discharge. The main hospital department is in the midship section of the ship, where there should be the least motion. Each ward has its group of toilets, washrooms, bath and showers, linen room, pantry, and quiet room. The berths are arranged so that they may be double banked or single banked. When single banked the mattress is thirty-two inches above the floor, thus bringing the patient to a comfortable working distance. The wards are metal sheathed on all sides and ceiled with full rounded corners of a six-inch radius at all coves, thus permitting ease in cleaning.

Each ward has three systems of lighting. All berths being in the fore and aft position, with

head in direction of shear, as they should be on a ship, the ceiling lights are all placed so that they will light the fore and aft and athwartship aisles, with a screen forward so that the light will not shine in the eyes of the patient in the forward berth. This ceiling light is not a light of high brilliancy. At each berth there is a portable comfort or utility light. This light may be used by the medical officer or nurse to examine a throat or do a dressing, or for any bedside utility where a portable light is needed. The standing lights or night lights are placed low so that they will not be a disturbing factor, and at the toilets a screened flood light is installed to show the location of the door. The wards on the main and second decks are nine feet high, which is two feet higher than one finds on the average ship, but not sufficiently high to permit of a method of indirect lighting.

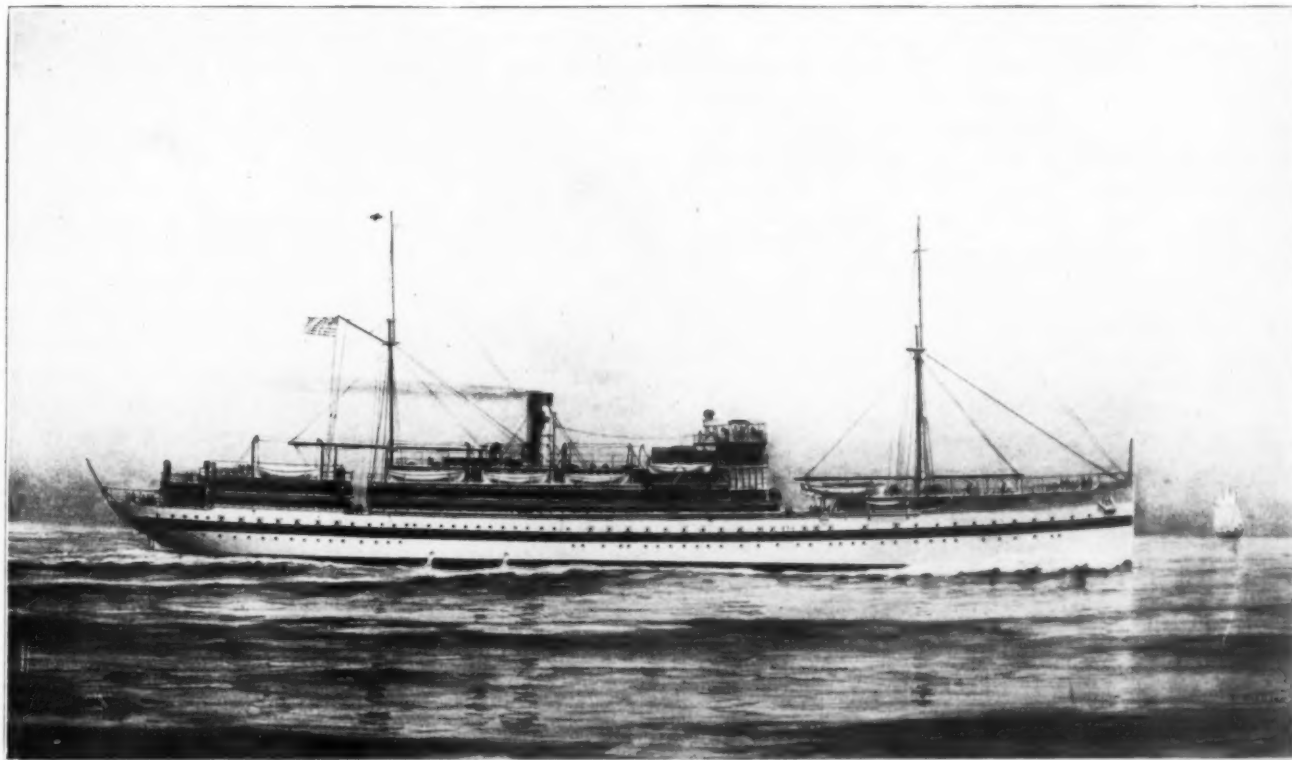
### Ventilating System

Every effort is made to secure the maximum amount of natural ventilation and illumination. The ports are of large square design each having a smaller round sea port mounted in it. These ports are designed so that they may be fixed open in such a position that they will act as a wind scoop as the ship rides to the wind. On the in-board side of the ward there are windows, each having three sash openings into the passage. This passage is pierced by a hatch or a shaft, as the elevator shaft, which acts as an uptake for natural ventilation in the same manner that the flue

of a stove would act. Each ward also has an artificial supply and exhaust ventilation system. In winter the air is taken in through ventilators by large electric multivane fans. In the blower rooms the air passes through thermotanks, where it is heated and humidified, then travels through insulated ducts to the wards. It is not discharged through louvers directly on the patients, as is the custom in the usual ship, but is brought down between frame spaces and behind sheathing, and discharged about ten inches above the deck, the object being to deliver air below the level of the berths. The exhaust ventilation is on the opposite side of the ward and at the upper deck level. A ship is not like a habitation on shore, as the fresh air comes in from the roof as it were, and not from the cellar. The method of placing intakes and exhausts was not only developed with due consideration of air exchange in winter, but also in the tropics, or in rough weather when battened down at sea.

### Furnishing and Arrangement of Wards

Each patient in the ward has a locker for his clothing, and at each berth there is a bedside stool which attaches to the bed rail and serves as a bedside table. This stool is of the design suggested by Commander E. M. Blackwell (MC), United States Navy, whose interest and ingenuity in all matters pertaining to hospital ships deserves special mention. The wards are so arranged that they do not serve as a passage.



A view of the floating hospital, the U. S. S. Relief, which can accompany our fleet around the world.



Where a hatch passes through a ward, the hatch is trunked so that access will not be through the ward, yet the ship was so well planned, that it was necessary to trunk but one hatch.

### Passage About the Ship

The second deck is the main undercover passage through the ship. There are three elevators and four lifts, all of which, excepting the elevator to the contagious disease department, may be reached from the second deck. The main utility rooms like the hydrotherapy rooms, endoscopic room, x-ray room, laboratory, operating rooms, etc., are all arranged along this deck or adjacent to the elevator, so that a patient may be brought down by elevator from an upper deck aft, routed along the second deck to the forward elevator, and up to the x-ray room on the main deck or to special rooms on upper or superstructure decks. In this way they do not have to go out doors. In fact the problem of patient access, by wheeled stretcher, about the ship was one that had to have considerable consideration. There were water tight doors to pass through necessitating ramps; shear had to be considered in all fore and aft doors; camber had to be considered in outboard aisles and through athwartship doors; tile for instance, on board ship has to be laid on the deck and held in place by coaming or bounding angle two and one-half inches above the contiguous deck, all of which has made the problem of wheeled access difficult, particularly where two paths of access approached at right angles.

Patients may be received aboard either by a specially designed patient handling apparatus, operated by drums and quadrant gear, somewhat on the principle of a Welin boat davit, or they may be brought from a boat up the gangway. The gangway has large platforms sufficiently roomy to accommodate a stretcher with stretchermen on either side. It is not necessary to carry the man all the way to the main deck, as there is a platform and large cargo doors on the second deck level, entering directly into the ward passage, from whence the patient may be transported to the decks above by elevator. On both port and starboard sides of this entrance are small operating rooms for reception of emergency cases, as well as for use as dressing rooms. Here a patient may be received, and cleaned up or examined, before going to the ward.

### The Operating Rooms

The main operating group is on the upper deck, convenient to the elevators. It consists of a sterilizing room, scrub-up room, etherizing room, instrument room, and an operating room, all grouped about a small lobby in such a manner that

they are practically equidistant, and each one may be entered without passing through any of the others. The sterilizing room may be entered without entering the rest of the group, so that boxes of sterilized dressings may easily be obtained for other rooms on the ship. There is a passage between it and the officers' rooms adjacent to the group, so that the occupants will not be annoyed with the heat which is generated there. It is also separated from the operating room by the scrub-up room, and yet there is direct access to it from the operating room through the lobby. The scrub-up room and etherizing room are directly adjacent across the lobby so that if desired the patient may be at all times directly under the surgeon's observation. The operating room is two decks in height, or fourteen feet from floor to ceiling. North light cannot be selected. There are 105 fixed ports in this room, the light being admitted from four directions. The natural illumination area is equal to one quarter of the floor area. The 105 ports assure practically a no-shadow-light. On either side, the light is admitted at two angles, one thirty degrees, the other about sixty degrees, so that either side of the deck may be elected for perineal or laparotomy work, whichever side is out of the sun. The sunlight is controlled by casement shades. The room is completely sheathed with metal, presenting a smooth surface with full glass sashes. In the space between the sash and ports there are two shades, one of translucent white, for cutting out sunlight, and one of heavy pantasote for preventing escape of light from the operating room at night, which might interfere with navigation from the bridge.

### Lighting and Heating of the Room

The artificial illumination of the room is accomplished by eight ceiling lights and two ceiling fixtures of no shadow type. These fixtures had to have specially designed ceiling supports to allow for ship's movement and vibration. There is an auxiliary storage battery circuit for this operating room as well as for the other operating rooms. Should anything happen to the ship's lighting circuit, by means of a relay, the current would automatically shift to the storage batteries. A red light would signal that there was trouble and that the main lighting circuit was in need of attention. The photometric value of the light at the working level has been carefully estimated. The room is finished in white with a high dado of neutral grey mat surface to cut down the glare. No air is blown into the room. The air enters the lobby and four other rooms, and finds its way into the operating room by any one of four doors as may be elected. Heating is provided by five radiators,

wide column type, mounted off the deck on bulk-head brackets. These radiators are so mounted that sterile sheets may be draped over them. Many methods of heating were considered but this simple method finally adopted, after conducting a number of experiments on the bacteriological content of air as influenced by forced air currents. The exhaust ventilation is so arranged that it may be operated from the top of the room in summer, or from the bottom of the room in winter. Only two ports into the room can be opened. This group of rooms has its own ventilating set, and there are special provisions to keep the air from any part of the ship from entering these rooms.

### The Out-patient Group

The out-patient rooms are on the main deck convenient to gangways and elevators. This group consists of a dental department, an eye, ear, nose and throat department, and a laboratory and x-ray department. The dental department is equipped with two dental chairs, and all necessary equipment for taking dental films, together with laboratory equipment for prosthetic undertakings. This department is always busy with out-patient work. The throat and nose department consists of a sound-proof room for ear testing, which is also fitted for eye examination. There are two completely equipped treatment booths and a small operating room. All the departments of out-patient work offer to the medical officers of the fleet the facilities of cooperative diagnosis and treatment. The laboratory with its equipment offers facilities for Wassermann and other technical examinations of the blood, excretions, and tissues. In connection with the laboratory department there is an animal house, autopsy or embalming room, a large mortuary, and a media room, which is fitted up for carrying media, vaccines, and serums, as well as other products which are properly preserved by cold. The media room and mortuary are separate from the rest of the cold storage vaults, being located in the hold. The main cold storage vaults for food are on the first and second platform decks. They are all reached by elevator.

### The X-Ray Department

The x-ray department consists of the x-ray laboratory, the x-ray study room, and the photographic dark room. The x-ray laboratory contains an equipment for all kinds of modern radiographic work, such as stereoscopic tables for horizontal or vertical work, horizontal or vertical radioscopy, and high frequency treatments. The x-ray study room is fitted for filing plates, and for examination by means of stereoscope or illum-

inated light bank. Though the walls of the x-ray room are of steel, three of the sides are lead-lined to safeguard against the influence of x-light on drugs, chemicals, etc., stored in the dispensary or laboratory which are near. The equipment in the x-ray room is so arranged that the machine may be operated either from within a lead-lined booth, or from any point in the room.

The photographic dark room is not contiguous to the x-ray room, but is a room in the cold storage department aft. It was placed there because it would not be economical to locate a dark room not requiring natural illumination, on an upper deck; and also because a dark room close to the source of x-light would be an unsafe place to keep the large number of plates which a hospital ship must carry. Plates will quickly deteriorate if not kept cool. The average ship's dark room, closed up to exclude the light, is one of the hottest places imaginable when in the tropics and as it is always necessary to make trips to the cold storage department to ice developer, it was therefore decided to make the dark room a part of the cold storage department, cool it to sixty-five degrees Fahrenheit, and store and develop the plates here under the most favorable conditions. The high humidity which is encountered here was considered the lesser of the necessary evils and appropriate safeguards against this were planned.

On the second deck adjacent to the hospital group are located such rooms as the endoscopic room, the acute treatment room, (which is a room specially equipped for treating venereal disease), and the hydrotherapeutic and thermotherapeutic departments. The acute treatment room is designed to reduce the danger of accidental infection, to the minimum. So far as practicable sinks are pedal operated, the hands being dried by an electric hand drier. The hydriatic division is equipped with needle spray the various douches, as well as continuous immersion tub. All these are operated from a control table. This department is also provided with shampoo table, various types of baking apparatus, and electric light cabinet.

### Post Office and Canteen

On the second deck near the mess rooms are the ship's post office and canteen. At the canteen there is on sale, at a reasonable price, all the standard toilet articles, confectionery, shaving equipment, tooth brushes, paste, etc. This is the ship's post office and canteen. At the canteen there for the welfare fund. On the main deck is located the recreation room, with a piano, phonograph, and even a moving picture machine.

The Commissary department consists of a butcher shop, storerooms for wet and dry provisions, and a large cold storage plant with separate



rooms for meats, fish, butter, fruit, vegetables, etc. On the main deck are located the ship's and officer's galleys with general mess issue room, potato peeling room, bakery, and bread room. On the second deck is located the diet kitchen for the preparation of special meals. In this kitchen is located the mechanical cow for preparing the milk and cream for the sick, also the electric ice cream freezers. From the galleys the food is routed by electric dumb waiter, or by truck, to the mess halls, where crew and convalescents are fed by cafeteria system. The containers are so designed and planned that food is handled but once. It is placed in a container in the galley, which fits into the transportation truck, and then in a compartment in the steam table. Every man being his own waiter, so to speak, quick service and hot food are assured. For ward service, a special carriage is designed which will hold the standard Navy food container and here again the cafeteria system is employed. As the bed patient cannot go to the cafeteria, the cafeteria goes to him. By this method food has the minimum of handling, and the bed patient is insured warm food, which is not possible when trays are prepared in the ward pantry, and have to await hand carriage into the ward.

### Baggage Room

A patient delivered at the hospital ship is accompanied by all his belongings. His bed and bedding come in a hammock roll, his clothing in a bag, and his personal trinkets, letters, etc., come in a ditty box. Of course these things cannot go to the wards. An electric lift takes them to a baggage room on the first or second platform deck, which has stands of racks consisting of cubby holes for stowing bags, hammocks, etc. Here they are securely stored. When the man is able to be about he can go to his bag each day at the hour designated, and obtain such things as he needs, which may be kept in his ward locker. Every effort is made to guard the belongings of the sick.

### Laundry Department

The laundry department consists of an equipment of washers, extractors, tumbler and drawer pull driers, a flat work ironer, tandem universal presses with puff ironers, body ironer, and ironing boards. The laundry proper connects with a group of three rooms, the sorting room; the linen repair room which is fitted with bins, and such equipment as electric sewing machines, and electric marking machines; and the linen stacks which extend the full width of the ship. Suitable laundry baskets are provided for distribution of clean linen, which go by electric lift to the second deck

and thence by truck and elevator to the various wards, linen rooms, or any of the upper decks.

So far as possible the hospital sections are located in the part of the ship which will be coolest in summer, and which will have the least motion at sea. The wards are free of steam pipes, which in tropics give off "wild" heat to the compartments they pass through. No ward for acutely sick is used as a passage to any other compartment. The wards have fresh water, and circulating hot and refrigerated water always on tap.

The ship carries five power boats in addition to having ordinary life boat equipment. Two of the power boats are thirty-six foot ambulance boats of a special design for transporting stretcher cases.

The *Relief* is the first naval hospital ship to be built from the keel up for hospital purposes. In 1910 the General Board of the Navy recommended that such a ship be included in the building program, but it was not until 1916 that Congress appropriated \$2,500,000 for her construction. Her keel was laid July, 1917, or early in the war, but little work was done upon her until the spring of 1919. The cost of labor and material steadily increased in the meantime so as to double the cost at the date of appropriation. As a constituent part of the fleet it is hoped that her efficiency will steadily increase, and that her life as a hospital ship will be long and honorable.

### BULLETIN GIVES FORMULA FOR INDELIBLE INK

The American Hospital Association, in its twenty-fifth bulletin, gives the formula for the compounding of the indelible ink for use in sterilization tests, which it recommended in Bulletin No. 21.

Ink for Sterilization Tests—Writes red—black after sterilization:

R	
Argent. Nit. ....	Oz. I
Potass. Bitart. ....	Oz. I
Liq. Ammon Fort. ....	Oz. IV
Succh. Alba ....	Drams II
Powd. Acacia ....	Drams II
Analine Magenta ....	Drams ss
Misc.	

### GETTING A BACKGROUND

In an article in *The Institutional Quarterly*, published by the Department of Public Welfare of the State of Illinois, on social service and the Chicago State Hospital; its development and progress, Dr. Edward A. Foley, assistant superintendent, urges that in cases where patients are brought to an institution by relatives or sheriffs from outside districts, some member of the social service department interview the one delivering the patient. A great deal of helpful information could be obtained in this way concerning the social history of the patient, the manner in which his family lives, whether the mental atmosphere is peaceful or disturbing, whether any of the members of the family are in need of help, and many other similar matters.



## PRINCIPLES OF HOSPITAL ORGANIZATION\*

BY MICHAEL M. DAVIS, JR., PH.D., IN CHARGE OF THE STUDY OF HOSPITALS AND DISPENSARIES OF THE CLEVELAND HOSPITAL AND HEALTH SURVEY

THE final governing authority of the hospital should be a board of trustees. No member of the board should be a member of the active or consultant medical staff of the hospital. Hospitals which are under a religious, or public, city, or Federal organization and which therefore cannot have trustees, should appoint an advisory committee similarly constituted. In addition to the men members of the board of trustees who represent chiefly financial, administrative and broad public interests and experience it is of much importance that there be included on the board of trustees a representative of some institution of higher education, viz: university, normal college, and women members whose experience and interest can be relied upon to contribute constructive ideas and opinions.

2. The appointment of the medical staff should be vested in the board of trustees. All members of the staff, chiefs of services, or assistants should be appointed by the board for terms of one year renewable by the board. The nomination should be made on the initiative of the board of trustees, or of the medical staff, or of an executive committee of the medical staff. The board of trustees should consult with the superintendent, or chief executive officer, before confirming the nomination of a medical staff, or of individual members thereof.

3. The superintendent of the hospital should be appointed by the board. He should have entire administrative authority over all departments of the hospital. Under the rules and regulations adopted by the board of trustees, the superintendent of the hospital should have authority to nominate or appoint all heads of departments, and employes. This implies the authority for discharge or dismissal of any employe for cause. The superintendent should be the representative of the trustees in relation to the staff or outside interests.

4. The medical staff should be definitely organized for the promotion of team work, common policies and satisfactory relations with the administration of the hospital. Regular meetings of the medical staff or sections thereof should take place for the discussion of professional work. For guidance in organizing such professional conferences the recommendations of the American Col-

lege of Surgeons are called to the attention of the medical staffs of hospitals. The staff should be organized into divisions or services, medical, surgical, etc. It is desirable that there be a recognized chief for each division.

5. There should be a medical executive committee composed of members of the medical staff, selected by the medical staff, or by the board of trustees on the nomination of the medical staff. The superintendent of the hospital should be a member of this committee. The total membership of the committee should not be so large as to be unwieldy. Seven members is generally the maximum desirable.

(a) The members of the medical executive committee should include the chiefs or representatives of the division of medicine and surgery, one or more representatives of the specialties, and a representative from the assistants or junior members of the staff.

6. Provision should be made in the by-laws of the hospital for the recognition of physicians, not members of the staff, whose practice in the hospital complies with definite hospital standards. It is recommended that these physicians organize into an auxiliary staff, without service or voting power, and that a delegate or delegates from this staff be recognized by the trustees and attending staff as their representative.

7. It is recommended that the board of trustees of a hospital arrange for periodical conferences of designated representatives of the trustees with the medical executive committee, the superintendent, and the administrative officers, such as the heads of the training school or nurses' service, and the social service department. This joint group should meet periodically for the discussion of hospital policies or administrative matters.

8. The staff of the dispensary or outpatient department should be appointed according to the principles above laid down, and the physicians serving in the dispensary should receive definite recognition as members of the hospital organization and staff. For each department of the dispensary there should be designated a chief of clinic, who should be under the general authority of the chief of the corresponding department of the hospital, but who should be directly consulted by the superintendent or the assistant superintendent who is in charge of the dispensary on all matters affecting the dispensary. The chiefs of the dispensary service should constitute a dis-

\*Prepared in cooperation with Haven Emerson, M.D., Director of the Survey, and Warren L. Babcock, M.D., Consultant in Hospital Administration for the Survey.

This summary of Principles of Hospital Organization appears in the Survey report, now published by the Cleveland Hospital Council, 308 Anisfield Building, Cleveland, Ohio.

dispensary medical committee which, with the superintendent, the assistant executive in charge of the dispensary, and such others as may be designated, should meet from time to time on dispensary matters. It is suggested that a representative of the dispensary staff be a member of the medical executive committee.

9. The medical staff of the hospital, acting through the medical executive committee and the superintendent, should formulate a definite set of standards, subject to ratification by the trustees, for all professional work of physicians in the hospital touching such matters as attendance, the making and supervision of records, diagnosis, use of laboratories, x-ray and other diagnostic aids, the duties of residents and interns, the inter-relationship of staff physicians and outside physicians, the matter of fee-splitting, etc.

10. Physicians, not members of the hospital staff, should be entitled to send to the hospital, and to treat therein, private cases in rooms or wards, subject, however, to such limitation as to number of beds to be allotted to outside physicians, as may be formally made by the trustees, and provided that the physicians treating such cases conform to all standards made by the medical committee.

11. No physician should receive a fee from patients other than such fees as may be permitted to staff physicians, nor should any physician receive a fee from a patient unless the charges for the hospital care have been met, according to the rate established for various rooms or wards for members of the staff and outside physicians alike.

12. In such hospitals as may still continue to keep a training school as part of the hospital organization, there should be appointed by the board of trustees a training school committee composed of both men and women, to direct educational policies. This committee should include representatives of the board of trustees, with other persons known to have had experience in education, and also members of the alumnae of the nurses' training school. The superintendent of the hospital, and the director of the training school in the hospital, and representatives of the medical staff selected by the medical executive committee, though not members of the training school committee, should sit with the committee.

Among the Catholic hospitals, or in hospitals administered under a religious organization, which have no boards of trustees and are subject to the direction of the bishop of the diocese, a committee on the training school, advisory to the bishop, might with advantage be established to direct the educational policies of the training school.

The relationship between schools of nursing and

hospitals should be essentially the same as that created between medical schools and hospitals. The school of nursing, like the medical school, should exist primarily to give technical education to students who are to obtain part of their training in the wards of hospitals.

An ideal organization for a school of nursing which should be realized in Cleveland as soon as circumstances permit is clearly the university organization, in which ward training would be given in such hospitals as come up to the conditions required by the university for its students.

13. The superintendent of nurses in the hospital should be appointed by the board of trustees, on nomination of the superintendent, with the concurrence of the training school committee. She should have administrative authority, subject to the superintendent, over the entire nursing service, and she should be responsible for the educational standards and policies as laid down by the training school committee. It is considered desirable that the superintendent of the hospital should delegate to the superintendent of the training school the appointment and dismissal of nursing personnel.

The offices of principal of the training school and superintendent of nurses, being respectively educational and administrative offices, may or may not be combined in the same individual. When they are combined, the head of the training school should be designated, "Superintendent of Nurses and Principal of the Training School."

14. The social service department of the hospital should be under the direction of a head worker, who should be responsible to the superintendent. It is recommended that there be a social service advisory committee, which, among other members, should include one or more of the medical staff, and the superintendent of the hospital.

### SPECIAL FACILITIES FOR DIAGNOSIS

Several of the largest general hospitals of the United States Public Health Service are being provided with special facilities for the diagnosis of tuberculosis, and for the study of patients, to determine which Public Health Service hospital is best suited to their needs. These hospitals will become clearing houses for the diagnosis and placement of tuberculosis patients in their vicinity, especially for those with doubtful diagnosis, or with complications requiring expert care. At each of them physicians skilled in this specialty will be on duty, and the most modern methods will be in use. All Public Health Service hospitals, however, are open to tuberculosis cases; and admission is never denied because of lack of special facilities. Special centers are already functioning in the Public Health Service hospitals at Fort McHenry, Baltimore, Md.; Fox Hills, Staten Island, N. Y.; and Hospital 35, St. Louis, Mo. Other centers will be organized as soon as possible in order that a country-wide network of diagnostic facilities may be available for this purpose.



## MEANS OF EGRESS IN HOSPITAL FIRES\*

BY H. W. FORSTER, BOSTON, MASS.

IT is difficult enough to secure adequate egress facilities in factories or other buildings where the occupants are physically fit and mentally competent. The problem in buildings housing the sick and otherwise incapacitated is infinitely harder. The conditions in institutional buildings generally are bad, frequently deplorable. The reason the life loss is not greater than it is does not lie in good buildings, adequate exits, good alarm systems, adequate fire protection, and trained staffs, but in the fact that such buildings are used continually, and fires are likely to be discovered in their incipency, and in that nurses and other attendants have shown remarkable heroism at times of crisis.

It is the difficulty and the expense of providing even reasonably adequate egress facilities in the ordinary institution that causes such emphasis to be placed in this article on fire prevention and on the installation of automatic sprinklers, for with such an installation properly maintained, the chance of fire getting to the point where it jeopardizes life is exceedingly remote.

The egress problem varies with the building construction, and what will answer for a fireproof ward building will not do for a tinder box serving the same purpose. It also varies with the character of the occupancy. Tubercular patients able to walk and in full possession of their faculties present quite a different problem from incarcerated insane.

Closely allied to egress facilities, of course, is the question of the safety corps, as they have been termed in a preceding section of this article.

Some general comments and specific ones on certain classes of institutions are presented in the following sections:

*Egress in Name Only.*—In a western institution, the only means of egress from a chapel seating 800 people and located on the third floor of a combustible building was through three narrow doors located at the rear of the chapel and leading to an open wooden stairway. All of the windows were barred.

At one large industrial school for girls, all girls were locked in their rooms on the upper floors of a combustible building throughout the night, the only protection against fire being dry powder

tubes and hand grenades. Moreover, the basement of this institution contained considerable quantities of oil, grease, gasoline, and combustible materials generally.

The dormitory shown in Figure 7 is located on the upper floor of an institution for blind children. All woodwork is highly varnished. Thirty of the children sleep in the midst of this kindling pile, from which the only exit is the door shown at the far end of the room, which leads to an open stairway. The windows are so small and high as to be useless for exits.

In one of the most modern institutions for insane in this country, the nurses were found quartered on the third floor of a combustible building at the head of an open stairway with no other means of egress. These conditions are typical of those existing in hundreds of institutional buildings.

*The Need of Drills.*—In institutions housing children, some attention is usually given to egress facilities and fire drills. The idea seems prevalent, however, that when persons have passed beyond the school age, they are beyond the need of fire drills, and consequently spend the remainder of their lives, wherever they may be, in absolute ignorance as to what action they should take at time of fire. This is the present condition of thousands of aged, blind, deaf, sick, crippled, and insane throughout the country.

*Institutions for the Insane.*—In institutions for the insane, the uncertainty of control at time of fire is still further complicated by the practice of keeping violent inmates under restraint, generally at remote locations on upper floors, where, behind locked doors, they are kept in straightjackets, camisoles, cuffs, etc. Restraint of this kind is generally used most freely in institutions managed by women. In one institution, seventy-seven inmates were found restrained in this manner at one time. See account of fire No. 34, p. 29, July issue. Obviously, such patients should be located in the safest buildings, and on the ground floor, if possible, to permit most readily of rescue.

*Location of the Helpless.*—It is evident that in small institutions, a very definite effort should be made to have places of assembly such as chapels, dining rooms, and recreation rooms, located with special reference to ready egress, which almost always means the ground floor. Similarly, the seriously sick and the small children should be on the ground floor, if possible.

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\*Fifth installment of an article by Mr. W. H. Forster reprinted by special permission from the April, 1920, Quarterly of the American Fire Protection Association.

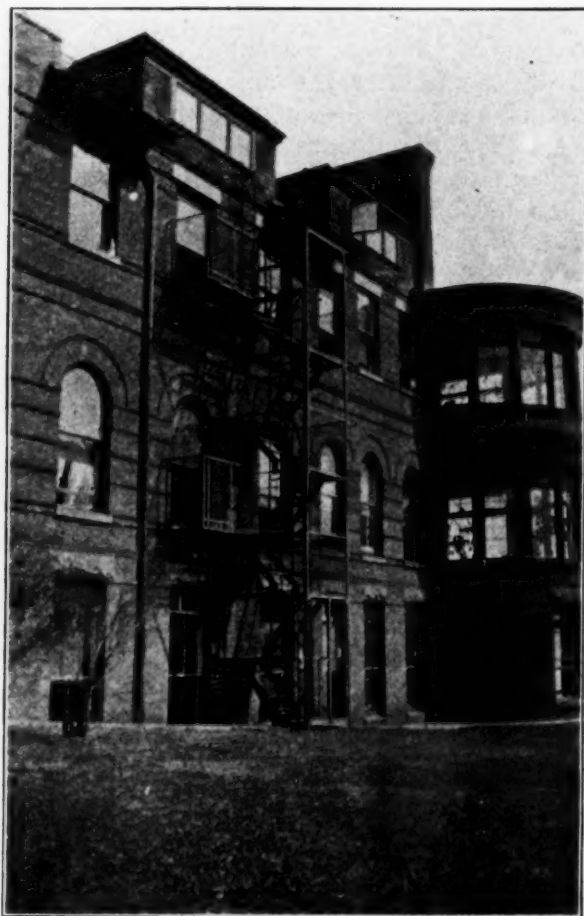


Much can be done in the ordinary institution along these lines to improve safety to life without any appreciable expenditure of money.

*Doorways.*—While for individual rooms, doors generally open inward, for larger assembly rooms it is universally advisable that doors swing with the travel, and that care be taken to see that they do not obstruct corridors when opened.

Doors should be kept unlocked wherever possible. In one asylum for the insane, as many as five locks, all different, have been found between inmates and exit to the outside, three of which locks were unnecessary for adequate control of inmates.

The minimum number of locks, standard keys;



A hospital fire escape, fair as regards pitch of stairs and good as to screen enclosures, but containing so many 180° turns as to be useless for carrying down patients on stretchers.

as wide a distribution of keys as necessary, and constant attendance are the chief means of making the best of a fundamentally bad condition. This of necessity pertains when persons are under lock and key in buildings not absolutely incombustible in every sense of the word.

*Windows.*—Most fire escapes, as at present installed, are reached through windows. Firemen use windows very often for rescuing persons and for fighting fires inside of buildings. In spite of

this, in many institutional buildings windows are covered by screens, ranging from light wire mesh to heavy iron bars set in the masonry. In many cases, substantial protection is necessary on some windows to prevent escape of inmates, but there is no excuse for such massive window bars as are often used. There are cases on record where persons have been roasted to death behind bars of this kind, while firemen outside were helpless to aid them. Where necessary, window screens should be of heavy wire mesh set in a rigid removable metal frame, secured by a lock on the inside, but capable of being opened from the outside without a key. Windows should be of ample size, with sills low enough to permit of their use as exits.

*Corridors.*—In the dark, or smoke, or under panic conditions, passage through corridors may prove difficult or impossible. Corridors should, of course, be wide enough to accommodate all who will use them at one time under any condition. They should further be kept clear at all times, especial attention being given to the removal of wheel chairs, spare cots, and other obstructions which are apt to be left temporarily in the corridors. Under certain conditions, especially in extensive corridors of combustible buildings, it is advisable to provide smoke barriers and draft stops, consisting of light partitions and swinging doors, at various intervals to retard the spread of smoke and flame for a sufficient period to permit of safe egress.

*Horizontal Egress.*—The most practical provision that can be made for egress in institutional buildings is an arrangement for moving occupants rapidly and in an orderly manner horizontally through fire walls or fire-resistive corridors, or across open bridges, to buildings or sections which are safe. Where buildings are large, they can be subdivided by standard fire walls equipped with automatic fire doors, thus dividing the building into two or more separate sections, with little danger of fire communicating from one section to the other before all occupants are safely out.

*Stairways.*—In the majority of present institutional buildings, all floors are connected by open stairways, which may serve as flues for the rapid spread of smoke and flames. When fire occurs on the lower floors of such buildings, the stairways are quickly made impassable. The stairs themselves are often of stone or metal construction, cleaned frequently with oil, and very slippery. Hand rails, if provided at all, are seldom at both sides of the stairways.

As far as possible, in new buildings, stairs should be located in fire towers. In all existing combustible buildings, open stairways should be

enclosed in fire-resistive partitions with fire-resistive doors, held open, if at all, by a fusible link arrangement, which will insure prompt closing at time of fire. At least two fire towers or enclosed stairways should be accessible from every portion of each building.

*Ramps.*—While by no means generally used, the ideal method of moving helpless persons downward, whether wheeled on beds or carried on stretchers, is on a system of ramps or sloping walkways, surfaced with cork tiles or other non-slipping materials. A slope of one foot in six feet or eight feet is practical.

*Smokeproof Towers.*—Wherever possible, both in new buildings and in existing buildings, standard smokeproof towers should be provided. Stairways completely enclosed in fire-resistive towers and commonly known as Philadelphia fire towers, provide the safest means of downward exit for able-bodied persons. Entrance to such towers is by open air balconies on each floor, with fire doors on the openings to prevent spread of smoke and flame.

In many of the present institutional buildings, including even the most modern, stairways are enclosed in fire-resistive walls, but doorways at the various floors are of wood, often with glass or open transoms above. Stairways of this type offer only a small portion of the safety assured by standard fire towers.

### Essentials for Fire Escapes

*Fire Escapes.*—In an industrial school for girls, entirely of frame construction, the only means of exit from upper floors was by one narrow open stairway and a vertical iron ladder on the outside of each building. This could be reached only by climbing over the railings of the iron balcony after passing through the chambers of institution officials, the doors of which were kept locked at all times.

In a western institution for the blind, the only exit from upper floors was by means of open wooden stairways or by vertical iron ladders on the outside of the building. In another western institution fire escape doors were found locked and could not be opened.

In a four-story combustible building, housing hundreds of feeble-minded children, an enclosed spiral metal chute on the outside reached to the top floor and was connected with each floor by narrow metal walkways which had rusted through and were so weakened that children could fall through to the ground below.

Conditions similar to these exist in hundreds of institutions throughout the country. Some escapes, to be sure, are wide and properly railed;

the stairs have an easy pitch; access to them is direct; they lead to the ground; they are located opposite blank walls or adjacent windows are protected with metal frames and wired glass; they are a valuable means of egress if used. A large majority of fire escapes, however, are a delusion; they may prove death traps. Narrow, steep, reached by climbing over window sills, terminating many feet from the ground, passing windows out of which flames are likely to pour, never used at times of drills, if indeed drills are held, they are a monument to the ignorance of the authorities and the selling ability of the manufacturers. An outside fire escape on an institutional building is generally an admission of the inadequacy of its normal exit facilities.

Adequate exit in new buildings should always be secured without resorting to fire escapes. On many existing buildings, however, fire escapes are necessary because of the inadequacy of the inside stairways. Where necessary, their construction and installation should be in accordance with the National Fire Protection Association rules, and with special regard to the type of institution to be protected.

Fire escape stairways should extend to the ground. Where for any reason it is not possible to do this, a counterbalanced section should be provided. The figure on page 26 shows a fire escape which is a mere pretense.

Fire escapes should be kept unobstructed at all times and this condition verified by frequent tests and inspections. Painting is necessary to prevent corrosion, and by making the escapes the same color as the buildings, they can be rendered quite inconspicuous. Escapes should, of course, be kept free of ice and snow.

For able-bodied and responsible persons, especially officials, nurses, and attendants, individual automatic fire escapes from sleeping rooms may be desirable under certain circumstances. Such escapes consist of a length of steel cable long enough to reach the ground and having a life belt at each end. The cable runs through a steel pulley which is provided with an automatic speed regulating device to prevent a too rapid descent.

*Signs and Lighting.*—Red and white exit signs, with letters at least 5 inches high and illuminated at night should be placed over all stairways and doors leading directly to the outside. Exit signs should not be omitted over doors leading from roofs and basements. The current for exit lights should preferably be obtained from a system separate from that ordinarily used for lighting purposes. It is also well to provide auxiliary gas lights for use in case the electric service is interrupted.



## A STUDY OF HOSPITAL NURSING SERVICE

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A MOST interesting nursing study has recently been undertaken at the Mount Sinai Hospital, New York City, at the request of Dr. E. H. Lewinski-Corwin, executive secretary of the Public Health Committee of the New York Academy of Medicine, in its attempt to secure definite information as to the amount of time necessary for suitable and adequate nursing care of the average hospital patient.

In order that the test might be a fair one, it was decided to select for this purpose the average type of patient from a medical, a surgical, and a pediatric service. Four adult patients (two men and two women) and three children were chosen for this study, and an exact record was kept of all time spent in the performance of nursing duties for a period of twenty-four hours. Only two children were selected at first, but the one chosen in the children's medical ward, a little typhoid patient, experienced a change for the worse and died at the end of twenty-one hours. Because of the fact that this case furnished so striking an example of the type of patient, to whom, because of some unexpected emergency, it is frequently necessary to give much more than average care, it was decided to include it in the records and also to repeat the test on a normal case.

The study, then, covers the proper and necessary nursing care, in a general hospital ward, of seven distinct patients of average type, for

twenty-four consecutive hours. Eighteen students, in all, were engaged in making this study. They were told in advance of the purpose of the test, and showed the most eager and active interest, two of the group staying on at their own request for twelve hours in order to insure accuracy of the record. The study, therefore, included variety in the type of patient chosen, and varying capacity in the nursing group concerned.

The time consumed in the performance of each nursing procedure was estimated, from the moment the nurse began, until she was at liberty to leave the patient, or until the task was completed as the case might be. The time required for necessary charting was included. The main results are shown in chart below. Copies of three of the nurses' records (cases No. 2, No. 4 and No. 7) are also shown.

Attention is called to certain discrepancies in the length of time spent in performing similar service. For instance: in chart No. 2 a nurse records waiting on a patient with bed pan, time three minutes, which included all time actually spent from the taking of bed pan from the rack until it was again returned in proper condition to same place. On chart No. 4 the same service required time varying from eight to fifteen minutes. In one case the patient was helpful and the nurse did not need to remain with her. In the other case, because of the mental attitude of the

	Patient	Diagnosis	Remarks	Hours 7 A.M. to 3 P.M. Hours Mins.		Hours 3 P.M. to 11 P.M. Hours Mins.		Hours 11 P.M. to 7 A.M. Hours Mins.		Total Time Spent in 24 hours Hours mins.	
<b>MEDICAL SERVICE</b>											
Case 1 Ward C	Adult Male	Pleural Effusion	Very quiet, reasonable patient who makes few demands and helps himself as much as possible.	3	2		60		49	3	51
Case 3 Ward K	Adult Female	Mitral Stenosis	Same type of patient as No. 1. Easy to care for.	1	50		50		55	3	35
<b>SURGICAL SERVICE</b>											
Case 3 Ward U	Adult Female	8th day Post-Operative	Reasonable patient, but one of the type that is not so helpful.	2	11	1	23	1	15	4	49
Case 4 Ward X	Adult Male	8th day Gastro-enterostomy	Very sick patient inclined to be faultfinding. Will not be hurried. Must be given much help even in taking nourishment. Makes many demands.	3	23	1	57		54	6	14
<b>CHILDREN'S SERVICE</b>											
Case 5 Surgical	9 mos.	Emphysema	A very typical little baby who needs good nursing care. Bottle fed.	1	32	1	9	1	11	3	52
Case 6 Medical	6 mos.	Feeding Case	Same as No. 5. Also bottle fed.	1	31	1	4		57	3	33
Case 7 Medical	6 yrs.	Typhoid	A 6 year old patient who had a very virulent form of typhoid. This patient took nourishment very slowly and had to be handled very gently and carefully. Became worse & died at end of 21 hours.	3 15 hrs.	51 20 min.	3 10 hrs.	9 32 min.	4 7 hrs.	50 51 min.	7 33 hrs.	50 43 min.
				4 hrs. 49 min. total time spent on 1 patient in 24 hrs.				33 hrs. 43 min. Total time spent on 7 patients in 24 hrs.			

Chart showing summary of time consumed in nursing seven patients at Mount Sinai Hospital, New York City, during a period of twenty-four hours.

patient and his determination not to be helpful, all nursing services performed required much more time and greater personal effort.

It will be noted that *thirty-three hours and forty-three minutes were consumed in caring for seven patients.* This is equivalent to *four hours and forty-nine minutes, per hospital patient.* It must be remembered in studying these figures that no time was wasted or lost by the nurse.

Another interesting feature of the study, is the relative amount of nursing care required during different periods within the twenty-four hours. The periods used in thus dividing the day, are those followed in hospitals having an eight hour nursing day; the first period from 7 a. m. to 3 p. m., the second period from 3 p. m. to 11 p. m., the third period or night duty period, from 11 p. m. to 7 a. m. Using this division we find that

CHART SHOWING TIME RECORD OF NURSING SERVICE RENDERED TYPICAL MEDICAL CASE AT MT. SINAI HOSPITAL, NEW YORK CITY

November 17, 1920.

Case 2—Mitral Stenosis.

Female medical case, adult, no special treatment. Ice bag applied p. r. n.			
Service Started		Service Ended	Minutes
A.M.		A.M.	
7:10	Mouth Wash.....		
	Full bath.....		
	Alcohol rub.....		
	Hair combed.....	7:52	42
8:02	Ice-cap prepared.....		
	Glass of water.....	8:10	8
8:10	Bed made, table dusted.....	8:20	10
8:34	Medication.....	8:36	2
8:50	Bed pan.....	8:52	2
8:52	Temperature, pulse, respiration.....	8:55	3
9:25	Preparation of 10:00 a.m. lunch.....	9:40	15
10:00	Doctor's rounds.....	10:02	2
10:40	Bed pan.....	10:42	2
11:30	Dinner prepared and served.....	11:35	5
12:05	Tray removed.....	12:06	1
P.M.		P.M.	
1:02	Bed pan.....	1:05	3
1:15	Fruit and glass of water.....	1:17	2
1:49	Ice-cap prepared.....	1:53	4
2:00	Medication.....	2:06	6
2:30	Bed pan.....	2:33	3
	Total time consumed during first period.....		1 hr., 50 min.
3:00	Orangeade served.....	3:05	5
3:42	Bed pan.....	3:45	3
3:59	Temperature, pulse, respiration taken.....	4:02	3
4:30	Supper served.....	4:35	5
4:50	Tray removed.....	4:52	2
5:02	Bed pan.....	5:06	4
5:55	Alcohol rub.....	6:05	10
	Bed prepared for night.....		
6:07	Bed pan.....	6:10	3
8:00	Medication.....	8:05	5
8:07	Ice-cap prepared.....	8:12	5
8:15	Temperature, pulse, respiration.....	8:18	3
9:15	Bed pan.....	9:17	2
9:30	Patient slept until 3:00 a.m.....		
	Total time consumed during second period.....		50 min.
A.M.		A.M.	
3:05	Bed pan.....	3:08	3
3:15	Orangeade served, patient made comfortable.....	3:25	10
5:00	Basin of water, towel.....		
	Removed same after patient washed.....	5:10	10
5:20	Hair combed.....	5:30	10
5:32	Bed straightened.....	5:34	2
6:20	Breakfast served.....	6:40	20
7:00	Tray removed.....		
	Total time consumed during third period.....		55 min.
	Total time consumed in 24 hours.....		3 hrs., 35 min.

the nursing time required in the first period is twice that required in the third period; the second period strikes a balance between the other two. In other words if one nurse could perform the duties required in connection with the care of a given group of patients from 11 p. m. to 7 a. m., the assistance of a second nurse for four hours would be needed in the second or afternoon and evening period, while two nurses would be needed constantly in the period from 7 a. m. to 3 p. m. It is this varied demand which necessitates so much "broken time" in the arrangement of the eight hour nursing day.

If the figures obtained as a result of this study are used as a basis for estimating nursing needs, we are forced to conclude that in a hospital ward of thirty-six beds, with an acute service we would require a nursing staff of from sixteen to eighteen nurses for the twenty-four hours of service. The standard of nursing service proposed is probably no higher than is demanded if both patient and nurse are to be fairly treated.

In hospital administration it is necessary to take cognizance of the fact that an additional force of nurses is required for nursing services apart from wards. In the hospital in which the study was made, this additional force of nurses (the figures refer to pupil nurses only) is as follows:

Operating room .....	10
Social service and maternity out-door department .....	6
Dispensary .....	12
Obstetrical service, affiliation .....	12
Diet kitchen and milk room.....	4
On leave of absence or vacation (average) .....	10
Sickness, average .....	8

Total ..... 62

Therefore, in this hospital, with a daily average of 450 patients, there should be at least 288 student nurses, and a supplementary group of not less than thirty probationers at all times in order to maintain the indicated standard.

Regarding this conclusion, the criticism might be advanced that no allowance has been made for the group of out of bed patients, invariably found even on the most acute nursing service, many of whom require little actual nursing care. To offset this group, however, there is at all times a greater number of acutely ill patients, who require almost continuous care. This is particularly marked on surgical wards, where post-operative cases must almost be "specialled" for the first twenty-four hours, and quite frequently for the first three or four days after operation.

It will also be noted that no mention has been



CHART SHOWING TIME RECORD OF NURSING SERVICE RENDERED TYPICAL SURGICAL CASE AT MT. SINAI HOSPITAL, NEW YORK CITY

November 20, 1920. Case 4—P. O. Gastro-Enterostomy.

8th day P. O. Gastro-enterostomy—This record is one of an average P. O. case, but a patient who is highly neurotic and difficult to care for. He moves very slowly and needs much more individual time and attention from the nurse than many cases require eight days after operation.

Service Started		Service Ended	Minutes
A.M.		A.M.	
7:22	Bed pan.....	7:30	8
7:55	Mouth wash.....	7:57	2
8:00	Full bath—alcohol rub, bed made (all linen changed), soiled linen, tub, etc., put away.....	8:50	50
8:53	Water 3vi.....	8:58	5
9:00	Temperature, pulse, respiration taken.....	9:08	8
10:00	Tea 3vi.....	10:05	5
11:00	Bed pan.....	11:15	15
11:20	Enema (low S.S.).....	11:35	15
11:40	Bed pan (away, etc.).....	11:50	10
12:00	Dinner prepared and fed.....	12:45	45
P.M.		P.M.	
1:45	Water 3vi.....	1:50	5
2:00	Urinal.....	2:05	5
2:15	Milk 3iii.....	2:25	10
2:30	Doctor's visit.....	2:40	10
3:00	Chicken broth.....	3:10	10
	Total time consumed during first period.....		3 hrs., 23 min.
3:20	Arranged patient's flowers.....	3:27	7
4:00	Temperature, pulse, respiration taken.....	4:05	5
4:10	Patient made comfortable, linen straightened, pillows arranged, etc.....	4:20	10
4:30	Supper prepared and fed.....	4:55	25
6:00	Mouth wash, alcohol rub, bed straightened, sheet changed.....	6:20	20
6:45	Water 3vi.....	7:00	15
	Egg-nog.....		15
	Total time consumed during second period.....		1 hr., 22 min.
7:00	Temperature, pulse, respiration.....	7:08	8
7:10	Water 3iii.....	7:14	4
7:30	Urinal.....	7:40	10
8:00	Hot blankets.....	8:08	8
10:00	Water 3iv.....	10:05	5
12:00	Temperature, pulse, respiration.....	12:08	8
A.M.		A.M.	
2:30	Chart recopied—replaced new sheets.....	2:45	15
2:50	Water 3iv.....	2:55	5
4:15	Temperature, pulse, respiration.....	4:21	6
6:25	Breakfast prepared and fed.....	6:45	20
	Total time consumed during third period.....		1 hr., 29 min.
	Total time consumed in 24 hours.....		6 hrs., 14 min.

made of the hours necessarily spent in nursing duties on the wards, connected with the care of the patients, but not included as actual personal care—such as the care, surgical cleanliness and upkeep of examining rooms, dressings carts, trays, and infusion stands; keeping up surgical supplies, dressings, gloves and all equipment required for special treatments in wards; making rounds and rounds and more rounds at all hours of the day with the attendants, associates, adjuncts, and house staff; writing up reports, requisitions, and treatment lists; taking patients to and from operating rooms; caring for supply closets, cupboards, blanket heaters, linen closets, pantries, laboratories; keeping up the supplies of coats, suits, gloves, and looking after visitors, patients' personal belongings, etc.

In the face of such facts as these we may well be asked how hospitals even pretend to care for their patients with the present shortage of nurses. There are two answers to this. First, one nurse

can take a group of patients and work with them much more economically from the standpoint of time saving, than when dealing with an isolated case. Second, patients in general hospital wards at the present time are not receiving the amount of nursing care to which they are entitled. Nurses are struggling to give them all the nursing care possible, and to do the most important and

CHART SHOWING TIME RECORD OF NURSING SERVICE RENDERED TYPICAL PEDIATRIC CASE AT MT. SINAI HOSPITAL, NEW YORK CITY

November 17, 1920. Case 7—Typhoid (child 6 yrs. old.)

This is the chart of a child who was selected for this study but who died at the end of twenty-one hours. It furnishes a striking example of the ward patient to whom it often becomes necessary to give much more than the regulation amount of time and care.

Service Started		Service Ended	Minutes
A.M.		A.M.	
7:50	Temperature, pulse, respiration.....	7:57	7
7:57	Covers taken off bed, mouth washed, bath, hair combed, bed made.....	8:40	43
8:40	Water 3v.....	8:46	6
9:40	Cocoa 3viii.....	9:50	10
9:50	Patient vomited.....	9:59	9
9:59	Sheet changed, etc.....	10:03	4
10:30	Mouth washed.....	10:32	2
10:40	Opened infection on hand.....	10:43	3
12:00	Water 3vii.....	12:03	3
12:10	Milk and broth refused.....	12:12	2
12:30	Epistaxis.....		
12:45	Pillow removed, sheet changed.....	12:45	15
12:55	Ice applied.....		
	Water 3vi.....	12:47	2
	Milk refused.....	P.M.	
P.M.		P.M.	
1:30	Temperature, pulse, respirations.....	1:00	3
2:00	Orangeade 3vi.....	1:45	15
2:25	Involuntary defecation.....		
2:30	Clothing changed.....	2:15	15
2:30	Mouth washed.....	2:30	5
3:00	Sponge for temperature.....	2:45	15
	Water 3v.....	3:10	10
	Total time consumed during first period.....		2 hrs., 51 min.
3:20	Mouth washed.....	3:25	5
3:35	Enema given.....		
4:00	Clothing changed, etc.....	4:00	25
4:10	Nourishment refused.....	4:10	10
4:20	Temperature, pulse, respiration.....	4:15	5
4:30	Orangeade refused.....	4:25	5
4:45	Epistaxis.....	4:35	5
5:00	Mouth washed.....	4:50	5
5:30	Water 3iv.....	5:10	10
6:00	Urinal.....	5:40	10
6:30	Vomited, bed changed.....	6:15	15
	Camphor, gr.iii.....	6:35	5
6:40	Atropine gr. 1/150.....		
7:00	Pillows changed.....	7:00	10
7:30	Water 3iv.....		
7:40	Sub. Q. given.....	7:30	30
8:00	Digifolin given.....	7:33	3
8:05	Wrapped in warm blankets.....	7:45	5
8:30	Temperature, pulse, respiration.....	8:05	5
9:00	Seen by doctor.....	8:15	10
9:20	Pulse and Respiration.....	8:37	7
10:00	Pulse and respiration.....	9:13	13
10:30	Cracked ice given.....	9:26	6
	Cracked ice given.....	10:03	3
	Bed changed.....	10:37	7
	Total time consumed during second period.....		3 hrs., 9 min.
11:00	Pulse, respiration taken.....	11:05	5
11:45	Seen by doctor.....	12:00	15
12:05	Epistaxis.....	12:15	10
12:20	Pulse respiration.....	12:25	5
A.M.		A.M.	
2:18	Transfusion given.....	2:35	23
3:00	Hypo. camphor in oil.....		
3:20	Pulse, respiration taken.....	3:06	6
	Patient watched constantly.....		
	Warm blankets.....	4:06	46
	Pulse, respiration.....		
	Patient ceased to breathe.....		
	Total time consumed during third period.....		1 hr., 50 min.
	Total time consumed in 21 hours.....		7 hrs., 50 min.

essential things for their patients' comfort and welfare. But if you wish a frank expression of opinion, ask the nurses themselves whether or not they are able to give their patients the care which they require, and you will soon be answered. It might also be enlightening to get an expression of opinion from patients.

At present, hospitals are struggling to perform an impossible task. I say without fear of contradiction that student nurses in training with their wholesome, happy spirit of ambition and human interest, are doing more to preserve the morale of the hospital than any other factor, and that they accomplish marvels. But hospital and training school authorities know that, while they are struggling to do all in their power, they are falling pitifully short of what should and could be done in the line of nursing for their patients.

When such facts as these are more generally known, and more frankly admitted, the general public may begin to realize that an important duty faces them, in helping hospitals to solve the problem of furnishing sufficient nursing care for the sick of the community.

#### LATIN AMERICAN TRAINING SCHOOL

The Training School of Santo Tomas Hospital is the only one of its kind in Latin America. The hospital to which it is attached is the oldest one south of the United States, founded in 1696, shortly after old Panama had been sacked and burned by the Pirate Morgan, and the new city had been established in its present location. Some of the buildings of this original hospital still stand and are at present being used as chapel and administration buildings. Very little record can be found of the operations of the hospital after its establishment until 1865, when it was renovated and re-established by the Bishop of Panama, and placed in charge of French Sisters of Charity. If it was operated at all, it was probably on a very small scale, since it is not mentioned in any of the official documents.

The sanitary and health conditions of the Isthmus of Panama in those days begged description. Yellow fever and malaria raged rampant everywhere, and thousands of deaths were the annual toll. On October 17, 1905, an agreement was concluded between the Governor of the Canal Zone and the President of Panama, whereby all sanitary arrangements of the cities of Panama and Colon, as well as the administration of the Santo Tomas Hospital, would come under the supervision of the Health Department of the Isthmian Canal Commission. Under the provision of this agreement the Governor of the Panama Canal agreed to furnish a superintendent, two interns, and three graduate nurses for the administration of the hospital, while the Republic of Panama was to furnish all other employees, including twelve graduate nurses. This was the first step in the reorganization of the hospital. The next act was to install a modern sewerage and water system, for which there was a crying need.

On December 14, 1908, the President of Panama issued a decree authorizing the establishment of a training school for thirty nurses. Many difficulties were encountered in the operation and maintenance of the school. The girls of the upper classes of society could not be persuaded

to take the lowly profession of nursing. The young women of the intermediate class in a few cases were willing to enter the school, but in practically every case they lacked the necessary preliminary education. Practical education such as arithmetic, grammar, etc., were not considered essential to women at this time in Latin America. In addition, it was very difficult to secure graduate American nurses who spoke Spanish with sufficient fluency to carry on the instruction in practical nursing. However, in spite of all difficulties, the training school turned out eleven graduate nurses during the first eight years of its existence, and the hospital was changed into a well conducted institution, patronized by all classes of Panamanian society.

In 1916 a reorganization of the training school was considered necessary, to give some of the preliminary education which had been found to be essential. Teachers were secured and primary school education was given in the hospital.

At present the pupil nurses come from all classes of people. Those coming from the interior of the Republic of Panama, who have lived in a hut, and probably slept on a rug on the floor, must first be taught how to live in civilization. As a general thing they are apt pupils along lines in which they are interested, they have splendid memories, and study as well as the usual nurse in training. To offset these good qualities, they are generally wasteful, most of them having been accustomed to use what they had on hand today with no thought for tomorrow, and they are often unreliable.


Since its organization, in spite of obstacles, the institution has progressed steadily in size and efficiency. In January, 1918, a class of ten nurses was graduated; this class was composed of all the pupils who had been there more than three years. In 1919 another class of nine, and in 1920 a third class of eight pupils concluded their work. At present there are three classes in the school. The graduates of the past years are all well placed and there is a constant demand for many more than the hospital can supply. The social position of the nurses has risen with the progress of the institution, so it is now possible to get more women of the upper class to enter the profession.

The school is conducted along the same lines as any similar institution of any country in the world, but particularly along those of the United States. The entrance requirements are necessarily slightly lower, on account of the conditions which have been mentioned, but the elementary classes do much to overcome this disadvantage. A physical examination is required of each candidate, as well as the educational examination. The pupils are accepted for a month on probation, at the end of which they are either permanently accepted or rejected. A standard uniform has been adopted, regular hours of study, sleep, exercise, and recreation are required, and class work is carried on during nine months of each calendar year. Written examinations are given in all subjects in which lectures are delivered, and the successful candidates are graduated at the end of their three years' course of study.

The outlook for the future of the school is extremely bright, and it may easily become in the next few years the equal of any training school south of the United States.

Such help as we can give each other in this world is a debt to each other; and the man who perceives a superiority or a capacity in a subordinate, and neither confesses nor assists it, is not merely the withholder of kindness, but the committer of injury.—Ruskin.





*The*  
**MODERN HOSPITAL**

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Contributors, subscribers, and readers will find important information on advertising page 42.

### THE PARTING OF THE WAYS

MANY a hospital of today finds itself at the parting of the ways. To select one road means wiping out an accumulated deficit, establishing itself on a sound financial basis, and adding such facilities in building equipment and personnel as will enable it to give the community adequate service. To select the other road means meandering along at the old pace, conducting the hospital in an unbusinesslike manner, increasing the deficit, and hampering the work by the absence of such facilities as are required in an up-to-date hospital in order to treat its patients scientifically, and to attract and hold first class physicians and surgeons.

With the modern advance during the past three or four years in diagnostic and therapeutic methods, and the consequent multiplicity and perfection of instruments of precision, no hospital can expect to retain the interest of first class medical and surgical men, unless it provides whatever facilities are needed to enable them to make an intensive study of every case under their care. This means, among other things, adequate, up-to-date laboratories and x-ray equipment, as well as hydrotherapeutic and electrotherapeutic appliances. If the hospital has difficulty in securing first class men, it may be found, upon careful analysis, that its difficulty lies, in part, at least, in its failure

to provide them with the facilities they need to conduct their work well. This is not saying, of course, that every request for a piece of new apparatus or a new instrument must be granted without question. The attics and store rooms of many hospitals are littered with many an appliance that struck the fancy for the moment, only to be discarded when its limitations were discovered. What we do say, however, is that every hospital should strive to equip itself thoroughly with standard instruments and appliances, and such laboratory and x-ray facilities as capable men need for efficient work.

### KEEPING UP WITH THE TIMES

THE duty of the hospital superintendent to keep abreast of the latest developments in the field of business administration, in order to conduct the business affairs of his institution along modern lines, was very ably presented by Dr. Harold W. Hersey, superintendent of the New Haven Hospital, New Haven, Conn., in a paper read at the recent meeting of the American Hospital Association, on "Keeping Up With Administrative Progress."

Dr. Hersey makes several practical suggestions as to how this duty may be fulfilled. Few hospital superintendents have had the advantage of pursuing courses in business administration, such as have recently been established in some of the universities, or of attending courses especially designed for the training of hospital superintendents, such as the course now being given in the Cincinnati General Hospital, in conjunction with the University of Cincinnati, and the Vancouver General Hospital, in conjunction with the University of British Columbia. Dr. Hersey advises superintendents to pursue some well recognized course in business administration, and to devote a definite period weekly to its study. Interest will be added, and often greater profit will result, if several superintendents in the same community pursue the course together, and meet at intervals for discussion and the interchange of views. In acting upon this suggestion great care must, of course, be taken in the choice of the course to be pursued.

A second suggestion is that the superintendent take occasion to visit well conducted industrial plants, for the purpose of gathering new ideas that have a direct bearing upon the work of his own institution. The power plants, store rooms, accounting, and statistical departments of large industries are full of suggestions to the hospital superintendent, and an occasional tour of inspection through some of the principal departments of well conducted hotels will often yield rich results.

A third suggestion is that the superintendent read, not only the recognized medical publications and the magazines devoted to hospital administration, but also several magazines devoted to business administration. These magazines often publish timely articles frequently containing suggestions which, if acted upon, will increase the superintendent's efficiency and enable his institution to render a more accepted service.

All of this, of course, demands time, but the increased efficiency which is bound to result from following these practices, will undoubtedly yield the time needed for further systematic study.

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### YOUR COSTS MAY BE LOW, BUT WHAT OF YOUR SERVICE?

NOT a low *per diem* cost, but service should be the norm for the measurement of hospital efficiency. This, of course, does not mean that there should be any relaxation of the eternal vigilance necessary to keep costs down to reasonable limits; it does mean, however, that the hospital superintendent is not justified in cutting costs at the expense of service. When the patient commits himself to the hospital for treatment, he does so on the assumption that the hospital will render the highest type of service possible, and this may, and often does mean, a higher cost per day than would prevail were a lower type of service rendered. Not infrequently one finds a superintendent boasting of his low *per diem* cost. Whether such boasting is justifiable depends upon what the lost cost represents in service rendered. One may conduct a hospital that is little more than a boarding house, or a third rate hotel, and do it at a surprisingly low cost as hospital costs go, but one must expect to have a higher cost if the hospital renders the highest type of service, a type of service that calls for expert personnel, and modern diagnostic and therapeutic equipment. If the highest type of service is rendered and the *per diem* cost is low when compared with other institutions doing equally efficient work, then, and then only, is there occasion for justifiable pride.

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### A HOSPITAL AS A MEMORIAL

THOSE who contemplate the erection of a memorial to some individual, group, or event, do well to give earnest consideration to the merits of a well-designed hospital.

Although many monuments and statues are hideous to a degree, some are beautiful and give real pleasure to those who behold them. For these we have nothing but words of praise. But why should not more memorials take the form of hospitals in which practical utility and artistic

design find a happy combination? Such memorials will not only give pleasure to the esthetic sense, but also minister to human needs and human aspirations. Indeed, it is difficult to conceive of a more enduring commemoration than a hospital, through which suffering is relieved and the health standards of the community elevated.

This is particularly true of a hospital constructed and operated to serve as a health center from which emanate all the varied activities pertaining to the protection and promotion of the public health.

As a war memorial a hospital is especially fitting. The World War was fought in the spirit of service. Hospitals are altogether in keeping with this spirit. They can, moreover, be made to minister directly to discharged sailors or soldiers, and their families. Incidentally, relatives and friends of soldiers who made the supreme sacrifice, would have the opportunity to endow beds in their names, thereby perpetuating their memory in ministering to human needs. To use the apt phrase of the *American City*, hospitals as war memorials "would help the living while commemorating the dead."

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### SEND IN YOUR QUESTIONS

TO THE wide awake superintendent who is anxious to have his hospital render the community a service that is thoroughly efficient, scarcely a day goes by in which questions do not arise relative to some phase of the work of the institution that has to do with its equipment and operation. Today it may be a question as to the cost of laundry work or the best way to wash and sterilize feather pillows; tomorrow it may be a question as to the best type of plumbing fixtures for the kitchen, or the best method of storing vegetables; a week from today it may be a question as to the best method of treating an old surface to a new coat of paint, or the most effective way of keeping iron pipes from rusting; next month the superintendent may want to know how the linen of the hospital after it has been washed can be assorted most expeditiously, or what preparation to use in cleaning the hospital's bath tubs.

Just because questions of this character—many of them puzzling if not vexatious—do constantly arise in connection with the operation of the kitchen, the laundry, and the housekeeping department of the hospital, THE MODERN HOSPITAL, in conjunction with practical articles which it will publish during the coming month on the various phases of the equipment and operation of these departments, will answer any questions relating to these subjects that may be submitted during



the month. We urge superintendents, therefore, to bring their practical problems to us. With the help of our expert consultants, we shall be glad to assist in their immediate solution. The round table discussions at the annual conventions of the American Hospital Association are excellent, and meeting a real need, but why wait until the next convention before you settle that vexatious question?

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### NAVY LAUNCHES HOSPITAL SHIP

**J**ANUARY will probably see the great hospital ship *Relief*, the first hospital ship to be built from the keel up for hospital purposes, placed in commission. We, therefore, count ourselves fortunate in being able to place before our readers an account, both timely and authentic (see p. 18), of the construction of this ship, which with its five hundred beds takes rank among the larger metropolitan hospitals.

As each battleship has a fully equipped medical department of its own, which meets ordinary needs, this hospital ship will in no way supplant these departments, nor will she take over any of the functions of the shore hospitals. She will take her place as a fleet auxiliary, just as the supply ships, repair ships, and colliers do, and will move with the fleet helping to make it more self-sustaining.

But not only will she serve as a hospital ship for the fleet, fully equipped to care for its needs, in any climate and under all conditions, but she will also carry a complete movable hospital, including beds, medical and surgical supplies, and even motor ambulances. This will make it possible to establish a base or auxiliary hospital in the event of an epidemic, or in case of the necessity of landing a naval brigade.

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### DON'T LET YOUR WITS GO WOOL-GATHERING

**T**HE shortening of the hours of nurses in hospitals—in many instances taking the form of an eight-hour day—is a reform that will interest all who are anxious for fair play, and the establishment of working conditions that tend to minimize the baneful effects of fatigue, both upon health and the character of the work performed. This reform, however, as the *Nursing Mirror* (London) very appropriately pointed out, must justify itself both with reference to the nurse and her work. To quote this magazine, "The full strength of the reform will be that the nurse is not only healthier and happier, but that the patient is more effectively nursed, and receives more sympathy and consideration than under the old

condition." The added time and leisure must be wisely spent, in the pursuit of those things that make for health and a richer life, and that are bound to reflect both on the character of her work and the fuller contribution she is able to make to the general life of the community beyond the confines of her specific vocation. To conduct herself otherwise would be to play into the hands of those who have contended that with more leisure and outside interests, she would not give as whole-hearted and undivided service as formerly. The contrary should be true; a more efficient and undivided service should be rendered.

Dawdlers there always will be in every profession; conscientious members of the nursing profession should see that as few as possible are permitted to remain within their ranks.

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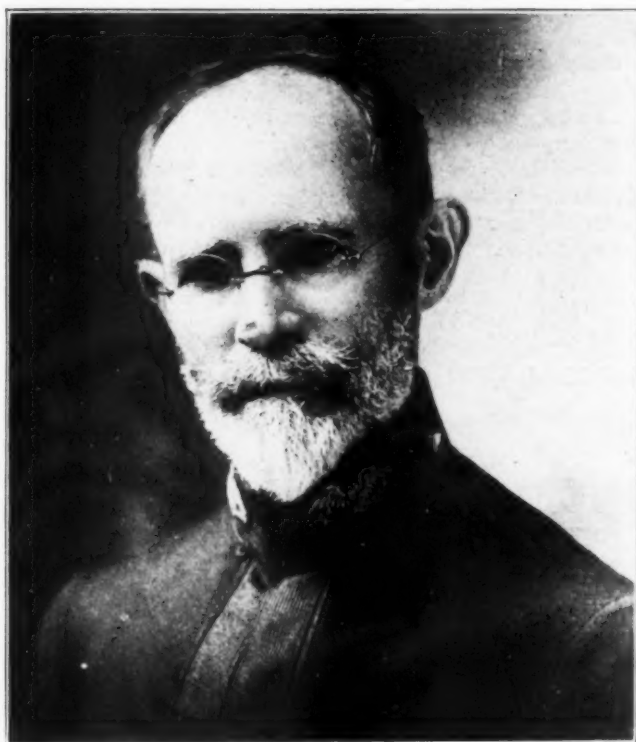
### DIVIDED RESPONSIBILITY A BANE

**I**T CANNOT too often be pointed out that one of the vital essentials of efficient hospital administration is that, except for the executive committee of the board of trustees, there should be no committees with executive powers discharging managerial duties. The presence of such committees is working grave injury to many institutions that might otherwise be doing far more excellent work. Numerous committees having executive powers means working at cross purposes and a division of responsibility. To tolerate them is doing an injustice to the chief executive officer, who should be held responsible by the board of trustees for the operation of the hospital.

This intolerable situation is all too prevalent. Glaring instances of it have been unearthed by the Cleveland Hospital and Health Survey which has been conducted in Cleveland, Ohio, under the auspices of that city's Hospital Council. Similar studies in other communities would undoubtedly reveal many other instances of this condition. Not infrequently one hears of Boards of Lady Managers who are empowered with executive functions by direct provision of the hospital's constitution or as the result of the hospital's custom and practice. Now and again individual members of such a board give directions to members of the hospital's staff. This is all wrong and boards of trustees should awake to the folly of this loose form of organization, and insist that all committees, except the executive committee, be advisory to the board of trustees and to the superintendent.

In a summary of its recommendations to one of the hospitals studied, the Cleveland Hospital and Health Survey specifically recommends that the superintendent be delegated full executive control of the hospital, including the training school.

## NEW SURGEON OF NAVY APPOINTED



Underwood & Underwood  
REAR ADMIRAL EDWARD RHODES STITT

**T**HE new surgeon general of the Navy, Rear Admiral Edward Rhodes Stitt, was born at Charlotte, N. C., in 1867. He received his degree in medicine from the University of Pennsylvania in 1889, and in the same year was appointed assistant surgeon of the Navy. In 1902 he was ordered to the United States Medical School as instructor in bacteriology and pathology, and in 1905 he served as medical officer of the Nicaraguan Canal Commission, an assignment which gave him an exceptional opportunity to study tropical diseases. He later studied in the London School of Tropical Medicine, and taught along this line on his return to the Naval Medical School. In 1909 Admiral Stitt was ordered to command the Naval Hospital at Canacao, returning to the United States in 1911 to take up his academic duties. In 1917 he was made rear admiral, and during the war he was responsible for the professional and educational standards of the Medical Corps of the Navy, through his duties in the preparation of medical officers just entering the service. Admiral Stitt is well known to the physicians of the country as an educator, as a man of remarkable attainments in laboratory research, as the author of several standard medical text-books, and as an inspiring leader in medical science. A long record of responsibility and achievement, therefore, is behind Rear Admiral Stitt as he enters his new office of surgeon general of the Navy.

## UNIFORM ANAESTHESIA RECORDS FOR ALL HOSPITALS

The National Anaesthesia Research Society has recently adopted a uniform chart for use in all hospitals.

After studying and comparing charts from all leading hospitals and clinics of the United States a committee of Drs. A. H. Miller, Providence; E. I. McKesson, Toledo; and A. F. Erdmann, Brooklyn; devised a blank chart. It is considered to embrace all essential points in the administration of an anaesthetic and leaves such a record as will speedily show the surgeon, anaesthetist, and nurse the history of their case.

This chart has been designed to show what happens to the patient and how he reacts to the various factors that bear upon his case. Detailed records of this nature

ANAESTHESIA RECORD

Flower Hospital Cleveland City Ohio

No. 210 WARD 5 DATE 9/10-1920. SURGICAL (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MM) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NN) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YY) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)

OPERATION PROPOSED Wertheim operation for Carcinoma of Uterus

PHYSICAL FINDINGS NORMAL EXCEPT Surgical condition

PRELIMINARY HYPNOTIC Morphine & Hyoscinose 1/6 - 1/50 TIME OF ADMIN. 7 AM

MOOR 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

DRYNESS OF MOUTH

PULSE

REMARKS

ANESTHETIC Nitrous Oxid-Ox. Film TECHNIC Combined AMOUNT 50% C.W.S. Smith ANESTHETIST H.L. Brown OPERATION Wertheim operation for Carcinoma of Uterus

REAINED CONSCIOUSNESS AT 10:55 AM CLOCK

Satisfactory narcosis

CONVULSIONS NORMAL EXCEPT FOR

VOMITING NONE SLIGHT EXCESSIVE

CIRC DEPRESSION

1st 2nd 3rd

SHOCK

A chart of this kind, properly filled out, affords all the information one needs to have about the way a patient reacts to an anesthetic.

have been all too few. Blood pressure, respiration, the color of the skin, and the reaction of the pupil are of prime importance and the requirement of such records will stimulate better work on the part of all.

Such records, systematically kept, will yield information never before available to the medical and surgical world.

In the interest of such information, the National Anaesthesia Research Society will print and distribute at cost this uniform chart to all hospitals using it.

The chart reproduced herewith was filled out by a leading anesthetist in a typical case.

The wise man never heard a joke  
But living wisdom from it broke;  
The fool no wisdom ever learned  
But it in him to folly turned.—Gems of the Orient.



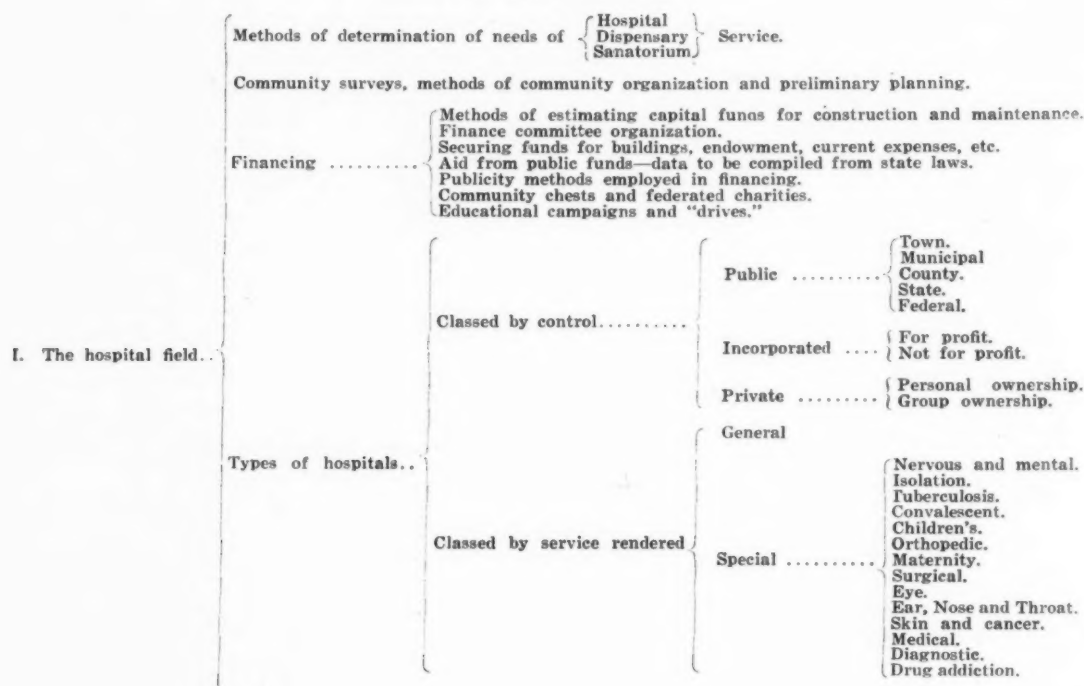
# HOSPITAL LIBRARY AND SERVICE BUREAU

of The American Conference on Hospital Service

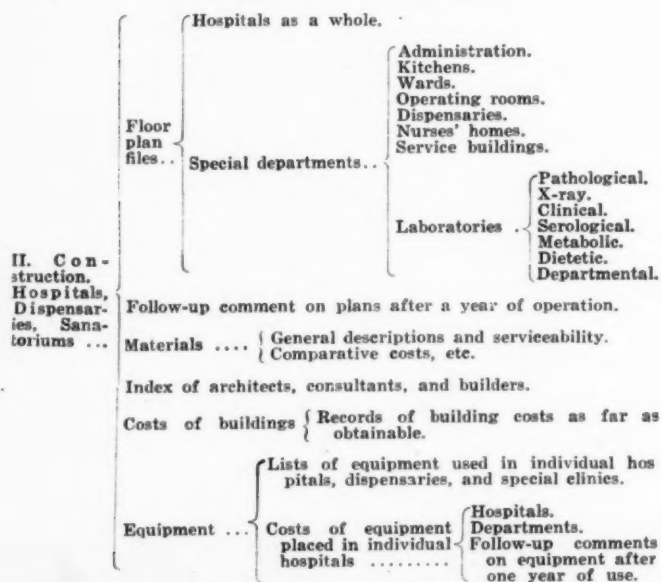
ALTHOUGH the work of the Hospital Library and Service Bureau of the American Conference on Hospital Service has been going forward steadily since its recent organization, it has been largely of a preliminary character. One of the interesting pieces of work accomplished is a comprehensive list of subjects, carefully classified, upon which the Bureau will collect and file literature and data. The list is published in order to give our read-

ers an opportunity to study it, and send in any comments they may wish to make directly to the Hospital Library and Service Bureau, 22-24 East Ontario Street, Chicago, Ill. It should be understood, of course, that much of this material has not as yet been collected. As the material becomes available, however, announcements will be made from time to time in the hospital, nursing, and medical press.

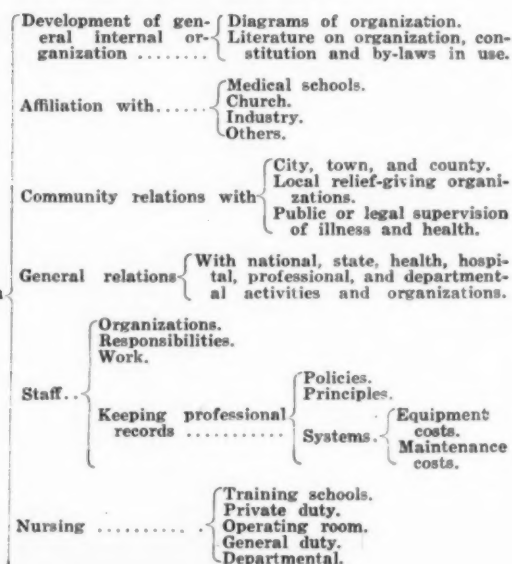
## I. The Hospital Field



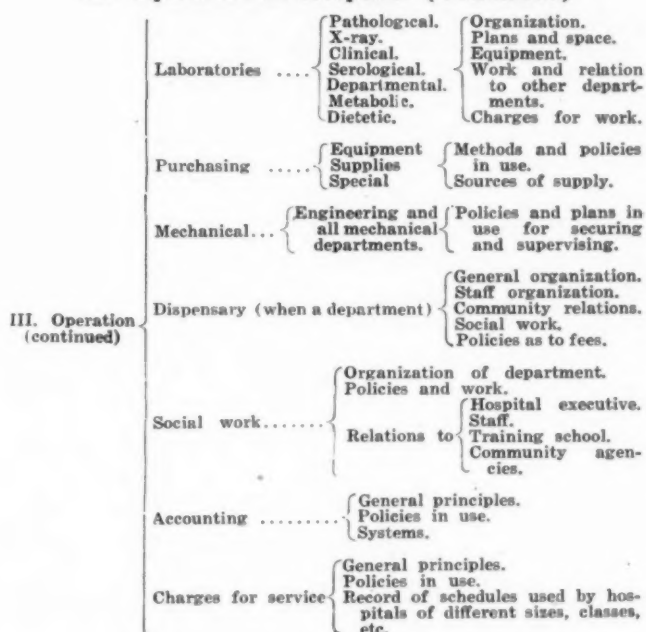
## II. Construction of Hospitals



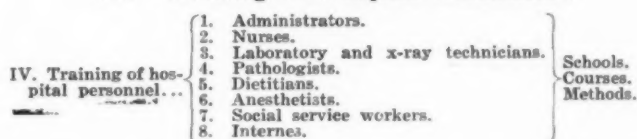
## III. Operation of Hospitals



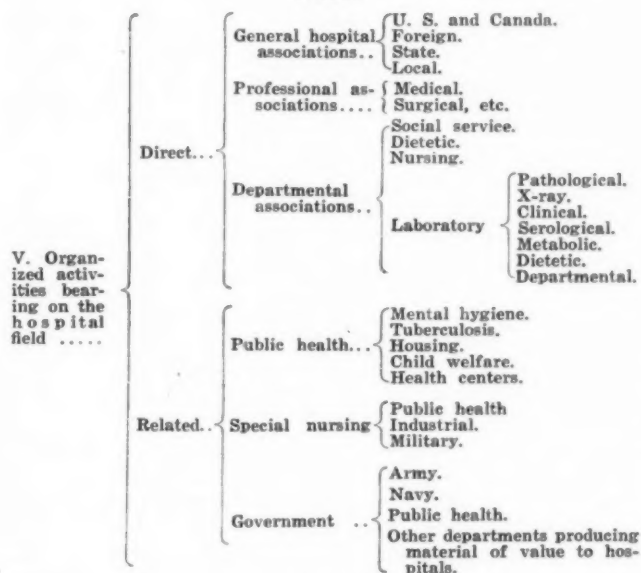
## III. Operation of Hospitals (Continued)



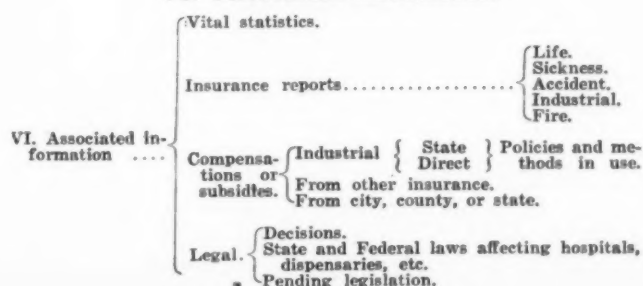
## IV. Training of Hospital Personnel



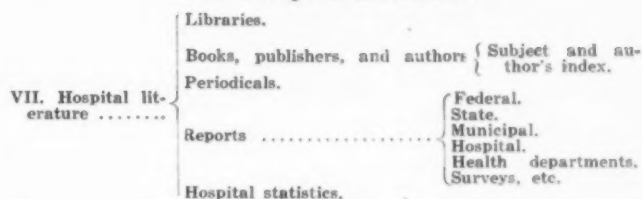
## V. Organized Activities Bearing on the Hospital Field



## VI. Associated Information



## VII. Hospital Literature



## TUBERCULOSIS CLINICS ESTABLISHED

An important part of the work of the Illinois Tuberculosis Association for the current year is based on two propositions. The first one is that "The next step is the first step, the location of the tuberculosis patient." The second is, that an entirely successful warfare against tuberculosis cannot be carried on without better instruction, and increased interest on the part of the medical profession. A staff of medical consultants has been formed, under the general supervision of Dr. George Thomas Palmer, president of the Illinois Tuberculosis Association, and the immediate direction of Dr. Russell E. Adkins, director of Medical Field Service. The members of this staff are pledged to devote some time each week to clinical work in the 102 counties of the state. Clinical meetings are being held in more than thirty counties each month, by working in conjunction with the county medical societies and local tuberculosis associations. The meetings are for the instruction of the medical profession, for the clearing up of doubtful diagnoses, and for the thorough re-examination of returned tuberculous soldiers. This service will be carried on indefinitely, thus bringing a competent specialist in tuberculosis to every county at least four times a year.

## DEMAND FOR PUBLIC HEALTH NURSES FILLED

The Red Cross Bureau of Information, 44 East Twenty-third Street, New York City, stands ready to supply nurses with any information connected with the nursing situation as covered by the Red Cross, and to be the instrument of exchange for communities, business men, industrial operators, individual persons who desire the services of the nursing profession.

If you are a nurse and wish to do institutional work, private duty nursing, go into or prepare for public health nursing, just make your desires known to the Red Cross Bureau. It is a veritable clearing house for nursing activities all over the country; it is a national storehouse of data, any section of which will be generously placed at your disposal. Nurses released from military service have both in this country and overseas found assistance and advice readily forthcoming. One hundred and nine of the 247 scholarships granted for training in public health nursing have been to ex-service nurses. If you are interested in public health nursing, why not take advantage of the Red Cross \$100,000 appropriation for training nurses to fill this enormous peace-time demand?

## TO DIAGNOSE PSYCHIATRIC PATIENTS

The United States Public Health Service will soon convene in Pittsburgh a board, consisting of Dr. A. J. Osterheimer of Philadelphia, Dr. T. Diller of Pittsburgh, and the officer in charge of the Marine Hospital, to arrange for the setting aside of a section in the hospital for the diagnosis of neuro-psychiatric patients from the third district of the Service, comprising the states of Pennsylvania and Delaware.

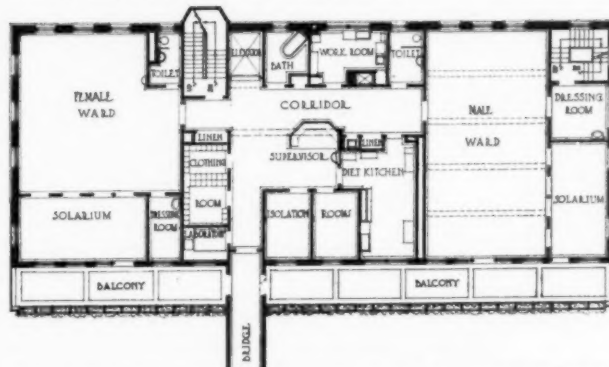


# STEVENS CLINIC SHOWS WELL CONCEIVED PLANS

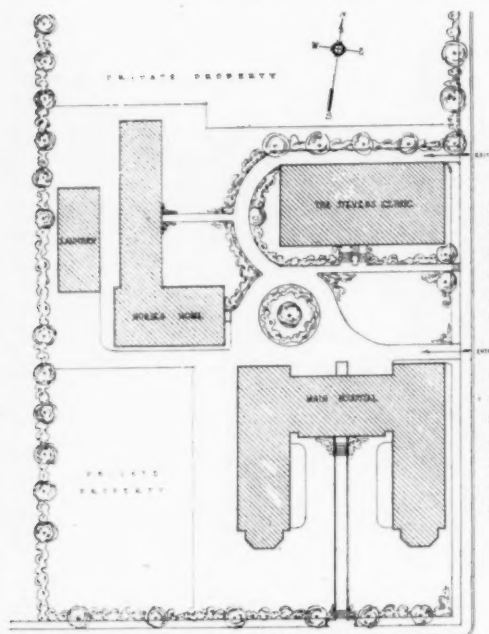
(See The Stevens Clinic, Fall River, Mass., by Warren C. Hill, MODERN HOSPITAL, July, 1920)



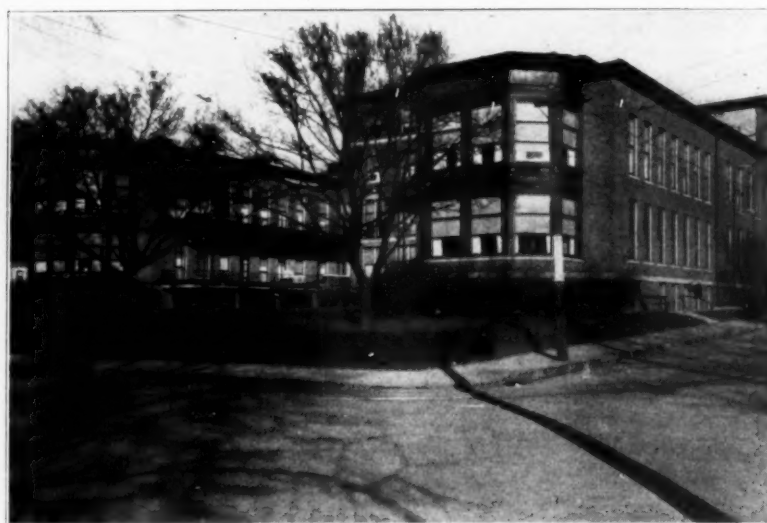
First floor plan of the Stevens Clinic.



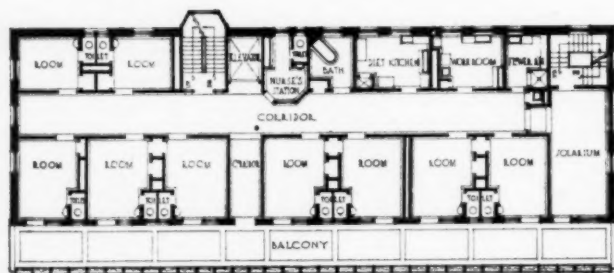
Second floor plan of the Stevens Clinic of the Union Hospital, Fall River, Mass.



Block plan of the Stevens Clinic.



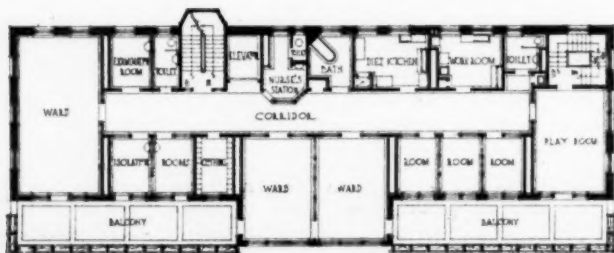
Front view of the Union Hospital, Fall River, Mass. Stevens Clinic stands just back of these buildings.



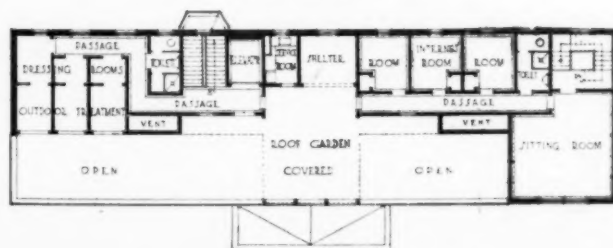
Third floor plan of the Stevens Clinic.



Ground floor plan of the Stevens Clinic.



Fourth floor plan of the Stevens Clinic.



Fifth floor plan of the Stevens Clinic.

## HOSPITAL CONSTRUCTION PROBLEMS\*

By RICHARD E. SCHMIDT, F.A.I.A., RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS, CHICAGO ILLINOIS

**T**HERE are several problems arising in the design of every new hospital, which are planned in many different ways, and no one of which appears to be satisfactory to everybody. It seems, therefore, that these should be studied by hospital superintendents and experts to arrive at standards. One standard may not be satisfactory for the hospital of small as well as the one of large bed capacity.

Some of these problems are of comparatively recent origin, the location and size of the laboratory, for example. Both in the research and teaching fields, hospitals have materially widened their scope of activity in recent years. This country leads in the physical equipment of a hospital for the care of the patient from the nursing standpoint; it can fully as well lead in the development of the clinical sciences. To do this, modern laboratories must be provided.

The location of the laboratory should be convenient to the staff, coordinating with the other functions of the hospital, favorable to study and observation without disturbance or annoyance. Separate rooms for pathology, bacteriology, chemistry, and serology should be provided. By preference, the laboratory should be on the top floor, where the best light is obtainable. Obviously, to comply with these conditions the laboratory should be placed in a separate wing.

The mortuary or post-mortem table should be in the laboratory itself or immediately adjacent, where material can be properly and promptly studied. The refrigerator for the mortuary can be combined with the refrigerators of the laboratory.

A complete laboratory requires an animal operating room. Animal rooms must be specially arranged to prevent odor from permeating the laboratory and the hospital, and the travel of noise to the annoyance of patients. These are quite easily avoided if there is a separate laboratory building, but a separate building has many disadvantages for a hospital of moderate size.

### Best Location for X-ray Laboratory

Hospital superintendents do not agree on the best location for the x-ray laboratory. There are good reasons for placing it close to the operating suite. There are also good reasons for placing it near the entrance to the hospital. If much out-patient work is done, the latter location is the better, for out-patients can come and go without disturbing the remainder of the hospital or carrying street dust and mud into many places. Hence it appears that the kind of work to be done should govern the location of this hospital service.

Opinions also differ in regard to the location of the surgeon's scrub room, anesthetizing, and the sterilizing rooms in the operating suite. There are advantages in having each one immediately adjacent and connected by doors to an operating room. This is possible if there is only one operating room; but impossible in a suite having several, unless the suite is built much larger than funds usually available will permit.

It seems advisable to arrange the kitchen and the floor pantries both for tray service and for distributing the food to the floor pantry steam tables in special containers.

To accomplish this flexibility it is necessary to provide larger pantries than are often built, in order to have sufficient room for the installation of steam tables and to provide space for convenient circulation.

### Importance of Sound Deadening Devices

The extent of sound deadening proportionate to a reasonable expenditure is a problem difficult of solution. It cannot, however, be ignored. Fire resisting construction, the only one permissible today, consists of hard and sound reflecting materials which propagate noise. Ordinary sound deadening materials are usually combustible and must be carefully chosen and applied judiciously if the fire resisting qualities of the building are not to be lowered to so great an extent that fire hazards are created. Sound proof doors in some of the special rooms, padded foundations for elevator machines, fans, and other motors, vaults for elevator controllers, door checks, and automatic closing devices for elevator doors should be installed in every new hospital.

Long corridors are virtually magnified speaking tubes which carry sound from end to end unless their length is broken by partitions and by means of carefully placed projecting pilasters and beams.

The illumination of corridors being important, it is necessary to build such partitions of a light steel framework and glass. The corridor floors should have inset runners of cork, linoleum, or mastic, but these bring about a considerable cost for maintenance and many superintendents who have had experience with different kinds of flooring prefer tile or terrazzo corridor floors and require the wearing of rubber soled shoes by nurses and other attendants.

The kind of flooring to be used is an ever present problem. If the means were unlimited, it would be a simple matter, inasmuch as there are excellent appropriate materials for every condition and situation. There are noiseless floors such as rubber tile or combinations of linoleum and magnesia composition, which are eminently suitable in corridors. Cork, tile, and specially treated wood parquetry floors laid in mastic on special foundations are beautiful floors for private rooms and wards, but all of these types of flooring cost considerably more than terrazzo, composition, mastic, linoleum, or cement; and it is an exceptional case if they are used over considerable areas. Inasmuch as their first cost differs greatly and methods of care and maintenance vary in different institutions, it is difficult to express a definite opinion.

These are some of the more important problems which arise during the designing of every hospital. It would be of great help to everyone working in the hospital field if they received careful study, analysis, and standardization, at least to some extent.

A combustion engineer should be consulted in all cases where boilers are found to be having difficulty, as the question of water treatment is one in which the employment of competent chemical and engineering knowledge is both absolutely necessary and highly profitable, and it would be far wiser to omit all forms of water treatment involving the use of chemicals rather than to undertake such without knowing accurately the composition of the water and of the material used to soften it.

\*Address at the First Conference of the Wisconsin Hospital Association, Milwaukee, September 16 and 17, 1920.



## INSURING HEALTH AND VIGOR IN A LARGE INDUSTRY

How much more important even than the pressing problem of labor turnover is the preservation of valuable human energy from impairment by accidents, many of them preventable, in large industries in the United States. Yet every year a million employees do meet with accidents which mean enormous economic loss and hindrance to production. It is obviously expedient, therefore, for any large industry to take such measures as may minimize this loss and its consequent effects.

Among companies already entering the ranks of provident fore care is the General Electric Company, which has a systematized medical service installed in each one of its important plants. This includes, generally, examinations and an efficient hospital service. At the main plant in Schenectady, where the hundred large and fifty small buildings and the 22,000 men and women housed make a distinct community, an Emergency Hospital occupies one entire building. This hospital is the last stage in the evolution of medical attention beginning with small scale equipping of each shop with first aid supplies and instruction in care of the injured. Now, however, the hospital has a staff of chief steward, four assistant stewards, and a hospital clerk, all under the supervision of a leading surgeon of the town and directly managed by one of the surgeon's assistants.

The hospital building, which is largely furnished with glass and enamel and lighted by the overhead method, is white and sanitary and completely equipped with modern utensils and instruments. A darkroom in which to develop x-ray plates and a dental clinic are some recent additions. Fourteen hundred and fifty cases have been treated at the latter since August, 1919, and many x-ray photographs have been made of blind abscesses or growths from decays, which might otherwise have caused diseases of rheumatism, heart affections, stomach ulcers, and tonsillitis.

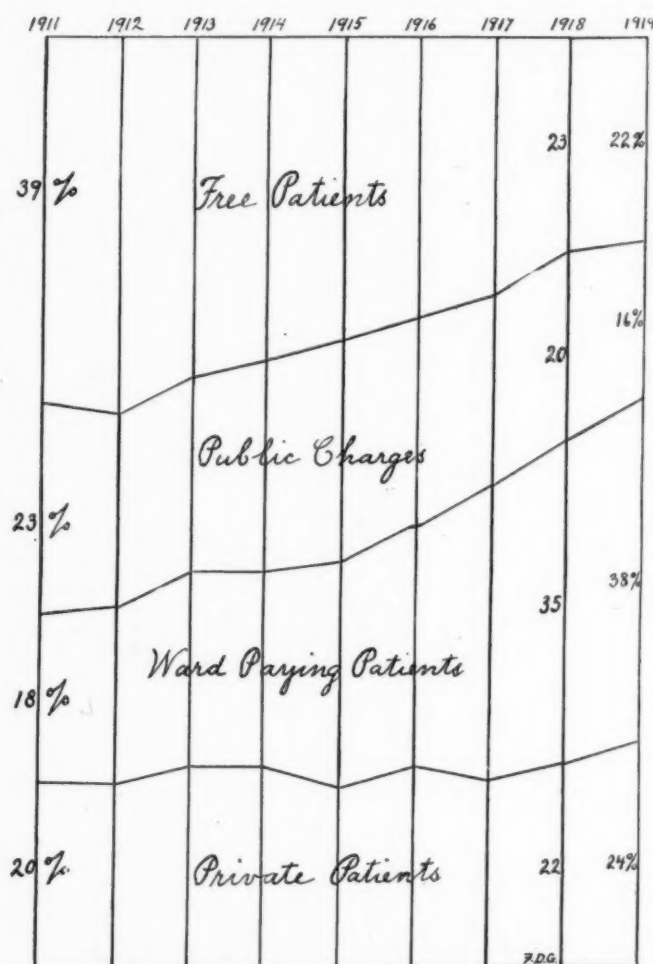
Every employee, before being hired by the company, is first given a medical examination to determine the possible progress of an unsuspected disease, to point out any susceptible condition, or to take measures for guarding the lives of associated workers. After absence from the works, employees are given a second examination on their return. At the hospital only surgical treatments are given; cases of actual sickness are cared for at home. Of these treated at the hospital, about 80 per cent are cuts, burns, and bruises; more serious injuries are taken to the city hospital. All this service is free; but its importance is impressed upon the mind of every workman by explaining the danger of blood poisoning or stiffening of the muscles and joints.

To make effectual all work of the hospital, a system of recording and following up cases has been formulated. The name, address, and other personal information of each injured man is kept by a clerk, who adds a brief description of the accident and transfers the record to a card index. A card indicating the time for subsequent treatments printed in English, Polish, Italian, and given to each employee.

A special service for the women employees is in charge of a woman physician, who is ever in readiness to answer sick calls to any part of the plant and who not only examines newly employed women but organizes all girls and women into health education units. In this way she can drive home effectually the facts of venereal disease and oral and sex hygiene.

## PEOPLE PAY FOR HOSPITAL SERVICE WHEN THEY CAN

This chart, made by the United Hospital Fund of New York, seems to show that when people have money they are eager to pay the hospital for its services. This is an encouraging proof of the self-respect of people in very moderate circumstances. During the prosperous years



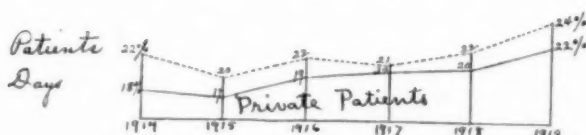
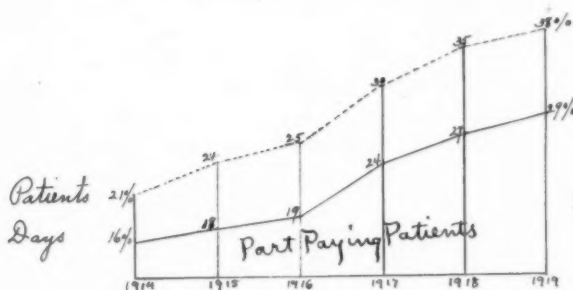
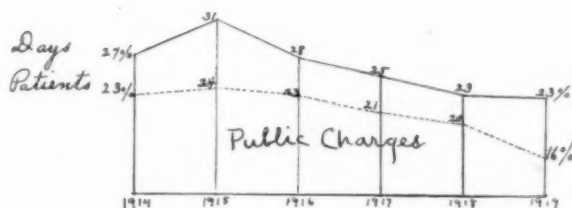
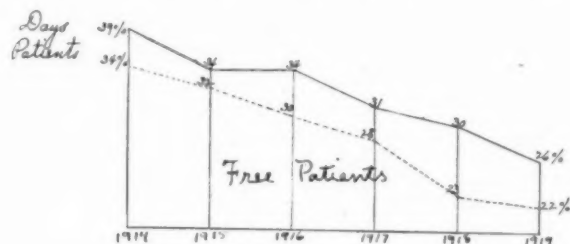
through which we have just passed, the number of free patients in 1919 dropped to 22 per cent, as against 39 per cent in 1911. The percentage of ward-paying patients rose from 18 per cent in 1911, to 38 per cent in 1919. Many of the ward-paying patients are paying only part of their expenses; in the case of public charges the city pays about half of the cost, while the hospital bears the rest.

## MANITOBA ORGANIZES HOSPITAL ASSOCIATION

At a conference in November, which was called in conjunction with the convention of the Manitoba Medical Association, and attended by representatives from the various hospitals in the Province, the Manitoba Hospital Association was formed. Dr. George F. Stephens is the first president and Miss Martin, superintendent of nurses at the Municipal Hospital, is the secretary. The Association is to be organized along lines similar to those in the three other western provinces, and will comprise some thirty hospitals. A complete survey of the Province, so far as the hospitals are concerned, will be made this year.

## THE POOR STAY LONGEST IN HOSPITALS

In this chart, made by the United Hospital Fund of New York, the dotted lines represent the percentage of patients, and the solid lines the number of days of treatment given. It can be clearly seen that the free patients and the public charges, who are all unable to pay,



get more days of treatment in proportion to their number than the paying patients. This is undoubtedly because the poorer class of patients are more run down, and also because they have not such good homes in which they can convalesce.

## NURSING IN COMPETITION WITH OTHER PROFESSIONS

It is obvious that the shortage of nurses in this country is neither a temporary problem nor one of concern for the nursing profession only. Allied professions are now hampered and will be increasingly deterred in the pursuance of any constructive work as long as they are unable to depend upon a supply of nurses in the field and a flow of graduates from schools.

However, blame for this situation cannot legitimately be placed on the medical and allied professions, even though their interests are immediately involved; nor on the public, though it is the source for all material for training schools. After all logical evasions have been brought to the support of the training school, the inevitable conclusion is that schools have, when all is said and done, failed through some kind of unthinking neglect to take account of the modern woman whom they wished

to train. Perhaps in nineteenth century England when nursing offered practically the only avenue of egress from uncongenial home or social life or when it supplied the most natural and, perhaps attractive, profession for women of ambition, schools could afford to squeeze out of students the last full measure of service for an unequalled opportunity. But this is not the nineteenth century. The future of the young woman of today is not determined for her by parents long before she has the inclination to think for herself; she is not driven into one occupation as a last resort. With the urge of ambition back of her the whole world lies at her feet and, what is more, itself provides means for its own capture.

Every profession offers attractive educational preparation of varying length of training but with definite prospects for future service. The discerning young woman—and her very discernment is indicative of the change wrought by the Twentieth Century—scans the horizon of opportunity for a profession which will be as pleasing as possible during training, as economical of expended effort for results obtained, and productive of both social and intellectual position. When she thus turns a discriminating consideration on all professions, she finds in nursing three long years of training. These in themselves are not so bad, for she is generally not lazy, but what do they offer her? Do they mean adequate opportunity for spending her time well, for actually improving her mental equipment and adding to her practical accomplishments? Any perfectly frank and honest answer to this question is an unreserved negative. In most hospitals—and in many of our largest and best—not only hours but days and weeks are spent at fatiguing routine tasks which are both physically and mentally enervating and destructive of self-respect. No energetic girl can long be satisfied with cleaning instruments, mending gloves, folding gauze.

It is any wonder, then, that with the advent of forward looking women a system of nursing training based on the most economical device for caring for hospital patients should not appear particularly attractive? Hospitals while complaining that it will cost money to change from the apprenticeship to an educational system may remember that in the long run the change may save them the cost of a much more serious readjustment, for with the many interesting and remunerative fields open to women today desirable applicants simply will not be available.

To substantiate this statement, it may be worth while presenting some figures. There are 3,000 schools of nursing in this country from which probably 13,000 student nurses are graduated each year. Roughly 15,000 have been released from active service since the signing of the armistice so that with the 13,000 graduates of this year there should be at least 28,000 more nurses available for service now than there were last year. Still the shortage becomes almost daily more acute. What has become of these 28,000 or more?

The answer is again that competition is attracting graduate nurses from the routine, general hospital service to more remunerative, more alluring futures. Some are leaving the profession entirely to enter business fields which at present offer many lucrative positions; some are becoming expert secretaries; and some are going into lunch room management. Many too are entering related fields of activity such as social service, anesthesia, x-ray, laboratory technique, and oral hygiene. Every nurse who turns aside to what seems a more attractive opportunity weakens the strength and scatters the power of usefulness of the profession as a whole.



## NEW YORK HOSPITALS RAISE MONEY EFFICIENTLY

FOR forty-one years the non-municipal hospitals of New York City have appealed to the public of that city to help them in their efforts to render free treatment to those sick who are unable to pay. This year, with a larger group of hospitals than ever before, and with a budget higher than any in the past, the United Hospital Fund is now completing a collection of \$1,500,000, to be divided among fifty-seven of the larger hospitals of the city.

It was in 1879 that several of the medical and surgical institutions of New York first gathered together to raise effectively, and with the least possible effort and expense, a fund that would, in a measure, offset that greatest source of hospital deficits, the treatment of patients who are unable to pay. At that time the organization was called the Hospital Saturday and Sunday Association, and for forty years it has gradually expanded. From the original nineteen hospitals, the number has grown to fifty-seven; and the \$25,000 goal of the first year has become \$1,500,000.

Without the help that the public thus renders each year, the hospitals of New York could not provide for that large percentage of their patients for whom hospital costs would otherwise be prohibitive. But the most valuable results of the raising of funds for the hospitals in the last few years has been the education of the public in worthy philanthropy, the inculcation of the thought that charity may at times be good business, and the preparation of the way for the annual appeals of the future.

The day of the drive may be past. It undoubtedly is. But that the day of the successful appeal to the intellect rather than to the emotion has not passed is made clear by those responsible for the collections of New York's large fund. We need not so much to be told, as to be reminded that need exists. We may be depended upon to respond to an appeal that rests logically upon a basis of true need, just as surely as we may be certain always to rise to any emergency.

Any difficulty that may have been met in the collection of New York's hospital fund has been experienced not so much in convincing the public of the justice of the cause as being worthy of their financial support as in the securing of workers. Our present-day highly organized industrial, social, and philanthropic system has given the world, upon which worthy charity must depend, a schedule too crowded to welcome additions. Time has become a commodity more bartered for than money; and, though in any period there are always those who may be counted on to render assistance, the number of them is not increasing in proportion to need or to population.

That New York's method of support of her hospitals is proper is strongly attested by the thousands who have given the most tangible sort of approval to it. That thirty-five out of the fifty-seven hospitals in the group should, even after all gifts had been recorded, have deficits, is to be deplored. The deficits had their inception in one fundamental cause. If one hospital fared more badly than another, it was only because it had happened to serve a larger number of non-paying patients, or had been less fortunate in its gifts and endowment income for the year. For the thirty-five or the fifty-seven hospitals all to make individual appeals would be annoying and wasteful beyond toleration. A combined appeal, with but one expense for all the requirements of such a collection, is the only convenient and effective means of attaining the end that the hospitals sought to attain.

With their interests so pooled, the hospitals of New York, forty-one years ago, contributed their thought to the machinery of efficient philanthropy. The King Edward Hospital Fund for London, the Cleveland Community Chest, the combined welfare collections of the war, have given approval to the idea.

Support of agencies that make our cities more healthful is as necessary as support of the government that makes our cities safe. The bill for the hospitals' 50 per cent of free work has to be met, and New York's six million people are meeting it.

### THE CHAMBERLAIN MEMORIAL HOSPITAL SERVES INDUSTRIAL COMMUNITY

THE Chamberlain Memorial Hospital at Rockwood, Tenn., was made possible by the liberal gift of the late Captain Chamberlain of the Roane Iron Company. With the nearest city hospital sixty-five miles away, this new institution had to perform the double function of filling the usual hospital needs of an ordinary community, and of providing adequately for all the emergencies of an industrial community. Three railroads, textile and iron industries, besides the coal mines, iron furnaces, and coke ovens of the Roane Iron Company, make this latter function a large as well as a significant one.

Another determining factor in the plan of operation



General view of the hospital.

and the general structure of the building was the necessity for separating colored and white patients—and, therefore, of providing three wards. The uncertain electric service of a small city also made it necessary to have stretcher access to the operating room without the use of the elevator.

Rockwood generously donated part of its city park for a site, on which the present building now stands. A nurses' home will be added on one side of this, and an additional building on the other, which will balance the proportions of the whole.

**Basement Plan.** In the basement one-half of the rear wing is given over to the fuel and boiler room; the kitchen is in the center; and the laundry, with both laundry and kitchen coal cellar, is between. A toilet for the colored help is at the end of the corridor. The elevator and stairway may both be used from the basement floor if necessary.

**First Floor Plan.** The first floor has a large reception hall with a partitioned space for an office at the left. Large cushioned seats around the columns, and furnish-

ings of a willow pattern lend an air of cheerfulness to this reception or waiting room. The patients are brought from the *porte-cochère* either directly into the colored ward, or into the elevator and to the operating room on



BASEMENT FLOOR PLAN

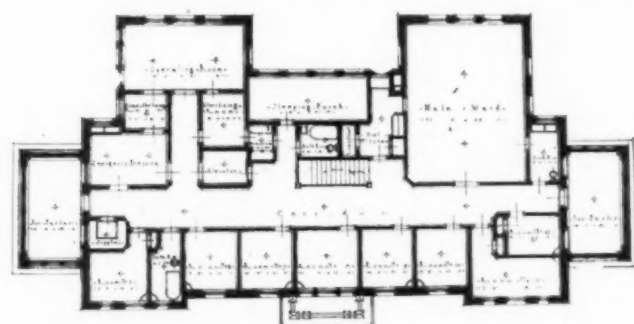
the second floor. The front of the building on this floor is occupied by four private rooms; the rear by a diet kitchen and dining room for nurses. A large linen closet, with steam pipes under the shelves to warm the linen,



FIRST FLOOR PLAN

opens onto the corridor, and the dumb waiter from the kitchen below runs up back of the linen closet and opens into the diet kitchen. A large porch balancing the *porte-cochère* is at the right end of the building.

*Second Floor Plan.* The operating suite on the second



SECOND FLOOR PLAN

floor at the rear left has an emergency dressing room as a special feature, because of the nature of the accidental injury cases treated. When patients are brought direct from coal or iron mines, coke ovens, furnace, or foundry,

it is necessary to have a room where they can be thoroughly cleansed of the dirt incident to their work before being taken into the operating room. The operating room suite is equipped with the most modern fittings. On this floor there are eight private rooms at the front, two of which have private baths and all have lavatories. Sun porches at each end of the corridor are enclosed with glass in the winter; and a cool, shady sleeping porch is provided for nurses when resting off duty.

The success that the hospital has achieved since being opened in 1918 is very remarkable. It is regarded as an institution which must be supported. So-called "good business" is more and more taking into account the economic value of insuring against the physical depreciation of its employes, and is willing to support generously such an institution. The social elements of the town are also interested, so numerous "showers" bring to the hospital all kinds of delicacies and essentials from the housekeepers' stores.

No small city need be without a hospital of this kind. A little farsighted shrewdness on the part of doctors and business men will lead to the conviction that prompt care of employes injured in accidents means the reduction of loss of life and of time. Even those people who can afford the luxury of a large hospital can be benefited, and will, consequently, gladly support such an institution.

## NEW YORK CONSTRUCTS HOSPITAL FOR WAR VETERANS

In answer to an appeal by R. G. Cholmeley-Jones, director of the Bureau of War Risk Insurance, the Governor of New York State, last month submitted to the extra session of the legislature a request for the appropriation of \$3,000,000 for the erection of a hospital where mentally defective ex-service men and women can be properly cared for. By this appropriation New York comes forward in an effort to help the Federal Government in its care of World War veterans. There are about eight hundred and forty-five cases in New York which need attention. The plan is to make the hospital as little as possible like the general type of insane hospital. The architect has realized that the average age for ex-service men is under twenty-five years, while that of patients in a state insane hospital is about fifty-five years. There will of course be a great many more cures among the ex-service men than in the usual state institution,—recognizing this fact, there will be a receiving building, a hospital, and a convalescent building, which will have a home rather than an institutional atmosphere. The less serious and curable cases will be separated from the more serious and chronic ones. There will be a gymnasium and track, tennis courts, baseball diamond, football field, outdoor swimming pool, and every provision for restoring men to physical as well as mental health. New York, in the construction of this hospital, is taking a new departure which other states may be called upon to follow, for the Federal Government is without adequate facilities for taking care of the soldiers disabled in the World War.

## HEALTH

"Oh, health, health, the blessing of the rich,  
The riches of the poor—there is no enjoying the world without thee.

Who can buy thee?

Be then not so sparing of your purses, honorable people."

## THE CHILDREN'S PAVILION AT THE SASKATCHEWAN SANATORIUM

The most recent addition to the Saskatchewan Sanatorium at Fort Qu'Appelle is the children's pavilion. This building was erected and equipped by the Daughters of the Empire of Saskatchewan, for the treatment of children affected with tuberculosis. It was formally opened in October by His Honor Lieutenant Governor Lake, and W. M. Martin, premier of the Province of Saskatchewan.

The building is of ordinary construction, stucco finish. It has a southern exposure and overlooks the beautiful Qu'Appelle Valley and Lake Echo. The main floor is divided by a corridor, separating the wards from the kitchen, dining room, toilets, etc., thus giving all the patients' quarters the benefit of a southern exposure.

The west half of the floor is given over to boys; the girls occupy the eastern end with a common recreation room between. Each section has three wards, two large and a smaller one, containing six and three beds each, and all opening out on the sleeping and sun porch. These wards are provided with wide doors so that the beds may be rolled in and out.

The recreation room is large enough for all "up" patients and is well lighted with windows and glass folding doors, which open out on the sun porch. This porch serves a double purpose in the pavilion, in that it may enlarge the recreation room during play hours and is used for heliotherapy during cure hours. The nurses' office occupies a space which overlooks the playroom and which is also within hearing distance of the sleeping porches.

### Bath Units a Special Feature

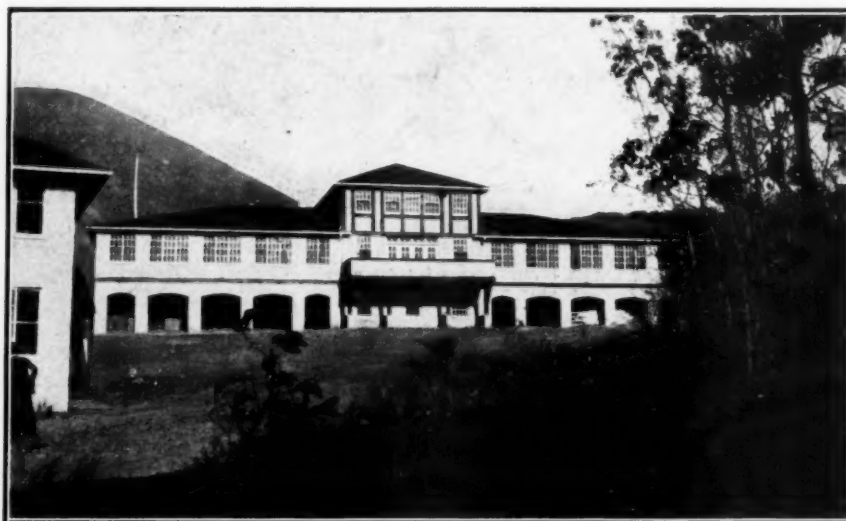
One feature of this splendid building is the arrangement of the bath units which are situated at the back of the building at either end. This arrangement consists of a dressing room fitted up with open bath, toilet, and lockers for the smaller children, and adjacent to this is a small dressing room, with separate toilet and shower bath for the larger children. The fittings in these units are of a size suitable to the occupants.

The dining room is spacious and well lighted, being separated from the kitchen by a corridor which lessens the circulation of cooking odors.

The upper floor affords accommodation for an isolation

suite and schoolroom, the latter occupying the space above the recreation room. This room is suitably lighted and ventilated. Its furnishings are of the most modern and hygienic design, all being movable so that it is possible to observe every sanitary precaution.

The building receives its light, heat, and water from the central power plant; but apart from that it is entirely self-containing. For a tuberculosis sanatorium built on the cottage plan, this is an admirable arrangement.



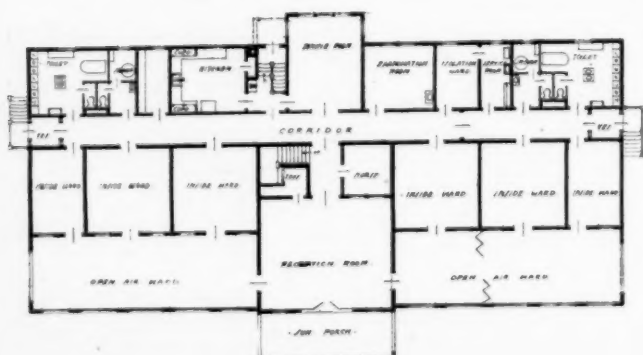
Front View of Children's Pavilion, Saskatchewan Sanatorium.

### ONE STORY BUILDINGS PREFERABLE

Construction of state institutions is being resumed. One state announces the adoption of a plan for a state hospital of the old type, large buildings three stories high, and arranged in a beautiful figure, something that will be a monument to the architect. The cost of construction will be about \$2,500 per bed, without fixtures, heating, plumbing, or furniture. The expenditure of this amount of money is no longer justified. A one-story building has been found to be more practical, and is certainly much cheaper. Such a building can be erected by the patients and employees of the institution, for there are no difficult architectural or engineering problems in connection with it. In a one-story building there are no stairs to climb, and there is no temptation to jump out of windows, so comfort and safety, as well as cheapness, are arguments for this type. Illinois is building such structures at a cost of \$600 per bed complete. Before the war the cost would have been about \$300 per bed. If the institution had done the work, the cost would have been even less.

### AMBITION OF THE SOCIAL WORKER

The duties of the hospital social service worker are many; in aiding patients to return to normal life, in finding people who need the care and treatment of the hospital, or in helping the medical staff in its investigation, and innumerable other things which are constantly being done, the work is invaluable. A great writer has formulated the ambition of the social service worker: "To share and have part in the sorrows and difficulties of those who are passing through ordeals, will broaden their vision, temper their hearts, and there will come into their own life's work a vision of a useful life which will uplift, strengthen, and fortify the life of the unfortunate patient and the family that holds him dear."



Plan of Main Floor, Children's Pavilion, Saskatchewan Sanatorium.



## SOME ESSENTIALS IN EFFICIENT HOSPITAL ADMINISTRATION

BY M. T. MACEACHERN, M.D., C.M., GENERAL SUPERINTENDENT, VANCOUVER GENERAL HOSPITAL, VANCOUVER, BRITISH COLUMBIA

WE recognize hospital administration today as an art and a science, no longer a function to be accepted and exercised by anyone. It demands natural adaptability, study, and experience, but above all, a liking for the work, for the path of the hospital administrator today is far from being strewn with roses. Several qualifications are required which I have not time to enumerate, but will briefly summarize by saying that beyond being a good executive officer, he must have tact, patience, unceasing optimism and enthusiasm, with a very constructive thinking mind. Let the idea or the contention pass away forever from our minds that any person can administer so complicated an institution as a hospital, where it is constantly a matter of life and death, and where abnormal human beings and perturbed dispositions exist on every side.

The remarks which follow may not contain anything new to you, for I am only going to attempt to impress more strongly on your minds some important every-day facts. They are not theoretical but practical features, which you can carry with you back to your own field of activity. Indeed, every paper or discussion in our Association should set forth some practical points which we can take back to our respective hospitals.

At the outset let me impress you thoroughly with one fact, that the fundamental basis of our thoughts and our deliberations at all times, in this great international convention which we are holding this week must be, "How we can best serve the patient." He is the common bond of union between us all as hospital people, and our papers and discussions must all hinge on service to him. Hospital administrators must ask themselves how they can best cure the patient, or relieve his pain, suffering, and anxiety. Fix the patient in your mind first, last, and always, and measure the success of your administration by the service you can give him in your hospital. By doing this you will be rendering the best service to your community, your country, and to humanity.

Of the many essential features in hospital administration, we will first consider organization. It is generally accepted that any business, large or small, must have organization, by which I mean a distribution of the work and a correlation of the different phases of the business, such that a maximum degree of efficiency and responsibility is established and maintained. This is even more important in hospital administration. The work of the administrator naturally falls into three main divisions: medical, nursing, and business, a convenient division so far as we are con-

*Hospital administration today is an art and a science which should only be undertaken by a person especially qualified for the work, and who thoroughly appreciates its many difficulties.*

*The hospital administrator should realize that organization is as essential in a hospital as in any business. He should stimulate cooperation, for without it the hospital cannot do its best work. There are various means of doing this, by giving the staff good working and living conditions, and by holding round table conferences with them. He should foster efficiency and economies, and be ever vigilant about keeping up the hospital morale. He should take care of hospital publicity by sending out well-pleased patients. Newspapers, if used rightly, may be an important ally in developing hospital spirit in the community. These are a few of the things which make one realize the magnitude and complexity of the task which confronts hospital administrators today.*

cerned at the present time. In the organization of the personnel there are three main divisions: the governing body, the chief executive officer, and the staff. These are fundamental in our hospital organization. The governing body may be constituted in various ways and called by various names, but its functions or powers are usually the same. It is responsible for everything connected with the institution, and it is the body to whom all others are responsible. There must be a chief executive officer or one responsible head in the institution, accountable to the governing body, and standing between

it and the entire paid staff of the hospital. Next to this chief executive officer come the divisional heads; the medical director, nursing director, and business director, all recognized experts in their respective lines. Their sections are further divided into well defined departments, with competent heads in charge and carrying the responsibility of their respective departments. Each of the departments must have its own staff, responsible through its head to the divisional head, and thence to the chief executive officer, who, in turn, is answerable to the governing body. In this way the work of any institution can be organized so that the administrator can at once put his finger on any trouble which may arise. Some of you will say that this does not apply to your hospital because it is too small. You are wrong, for your hospital, small or large, has the same functions to perform and can be organized in the same way; your departments may have to be grouped on account of a smaller personnel, but the fundamentals of this organization should be present.

### Cooperation is Essential

The war has stimulated cooperation in all things; we are unconsciously becoming more communal and less individualistic. I am a strong believer in cooperation. Always try to make everyone on your staff feel that he is one of the cogs in the great wheel of the institution, and by the performance of his duties, however humble, he is helping the hospital in its service to needful humanity. Any person who cannot begin and end each day's labor with unbounded interest should be eliminated from the staff. Harmonious cooperation in and between departments can best be established when certain conditions exist. The staff must have comfortable living and good working conditions, wholesome food, some social life, recognition for service, and in general, good treatment. I have found that it always pays to give a friendly word or nod

in passing, a word of approval or encouragement, or to consult members of the staff along their own particular line, thus recognizing their ability. Participation in the social life of the staff is commendable; you will enjoy such occasions as dances, picnics, excursions, concerts, etc., just as much as they do. Show your staff you have an interest in them and, indeed, they should be of such a caliber that you not only have an interest but a pride in them.

The greatest means I have of promoting cooperation is found in our fortnightly round table conferences, when all the heads of departments assemble for an hour. I preside at the meeting and we discuss matters pertaining to efficiency, economy, and better working of our various departments. We ascertain if there is good cooperation, if there are any omissions or overlapping. Everybody must be frank and open-minded, and all controversial matters must be laid on the table and discussed. Any department may be subjected to criticism of a constructive nature. At this meeting we include: the director of medical records, director of nursing, managing secretary or business manager, director of the surgical department, housekeeper, dietitian, foreman of works, chief engineer, foreman of the laundry, chief orderly, director of pharmacy, director of physiotherapy, director of laboratories, director of anesthetics, director of radiography, chief admitting officer, purchasing agent, and other heads of departments. The meeting is a clearing house for many troubles, and as it is held during working hours, attendance is compulsory. Each member is called on, in turn, to bring anything before the meeting, after which follows a general discussion. This is usually a very interesting hour to us all.

#### Suggestions for Increasing Efficiency

Today throughout the land, the profession and the public demand efficiency in our hospitals. Hospital standardization has rapidly spread over Canada and the United States, and has already greatly increased the efficiency of our institutions. Efficiency is measured, in the last

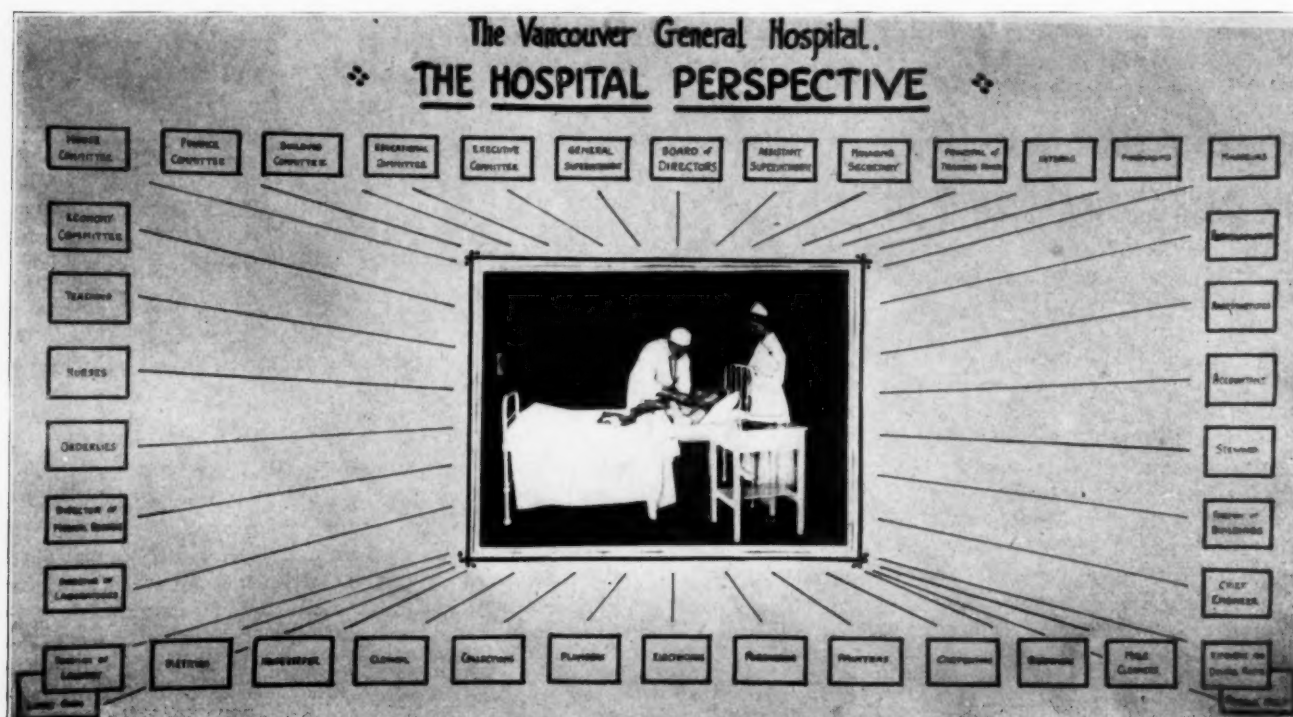
analysis, by the service rendered to the patient, and it means that certain conditions must be fulfilled: first, the institution must carry a capable and expert personnel, working harmoniously and cooperatively; second, the institution must have an up-to-date equipment and all facilities for diagnostic and special treatment; third, the institution, through organized machinery, must keep an intense scrutiny over all the work done, so as to make sure that the patient is securing the best results.

I might discuss hospital standardization, but you are probably all familiar with it. But, in short, all work must be well done, and the hospital must give a complete service, carefully scrutinized. The efficiency of your hospital is not measured by surplus or low *per diem* cost, but by service. To hospital administrators let me say one word in particular. Your organization should be so complete that you can at once detect any weakness, and your work so arranged that you can spend the greater part of your time using your brains for the institution, "doing research for your own hospital." There are no two hospitals alike and we cannot lay down a policy that will fit them all, but let us each take whatever steps we can to make our institutions thoroughly efficient.

The proper investigation of complaints concerning incompetent work or final results is essential today in a hospital. There will always be complaints, and their investigation and disposal is of vital importance. Here are a few essentials in this matter: have an organization such as to abolish cause for complaints, but have machinery to investigate them should they occur; have all complaints in writing if possible; receive and investigate them with an open mind; give all concerned a fair opportunity to state their case; and, after carefully weighing all evidence, render a definite verdict in writing.

Many complaints made are unfounded, and usually the party making them will refuse to put them in writing; such cases do not require investigation. Frequently generalized complaints are made, always try to bring these down to specific occurrences.

To discover the incompetent work done in the hospital,



All hospital service must focus on the patient, the common bond of unit between all departments in their service.





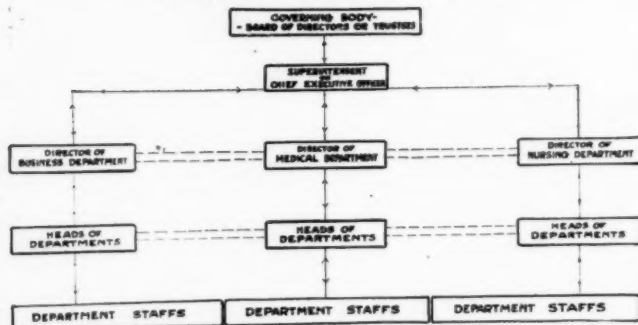
be using his brains for the institution. Fortunately, the labor-saving devices in the past few years have effected a marked economy. There are now on the market such labor-saving machines as apple peelers, meat cutters, bread cutters, choppers, dish washers, butter moulders, laundry equipment, adding machines, etc. These devices should be used in the hospital as much as possible.

**Money.**—Money is often lost by inefficient business methods. The commercial side of the hospital must be kept efficient and not be overshadowed too much by the medical side. The business department should be required to provide an efficient system of investigation and collection as well as a system of accounting that will not only pass the auditor, but will give an accurate knowledge of the costs of the hospital.

**Equipment.**—Economy can be effected in the purchasing, care, and use of equipment. Some of the equipment on the market today is not practical for hospitals, and only such as is standard should be purchased. Expert opinion should be obtained when necessary to guide you in buying only the best. Hospital equipment gets hard usage, so nurses, interns, and the staff generally, should be specially trained in its care and use; also repairs and renewals should be made at once. This may necessitate having a permanent staff of trades such as painters, carpenters, splint makers, etc.

**Supplies.**—In the purchasing of supplies familiarity

#### • HOSPITAL ORGANIZATION •



Hospital organization showing the fundamental elements in the organization and relations of the governing body, the chief executive officer, the divisional heads, and heads of departments. The dotted lines indicate co-operation and the arrow the lines of communication between the departments.

with prices, qualities, and standards is necessary. Large hospitals should have a purchasing agent, who must be reliable, honest, and experienced, or many thousands of dollars may be lost annually. All supplies should be duly requisitioned by the various departments, and when they are secured, invoices and requisitions should be checked. Contract buying in most instances is preferable to the open market, as tenders invite competition and usually obtain better results.

All materials should be kept in a store, systematically arranged and readily accessible. Indeed, hospitals would do well to adopt the army system and have a quartermaster in charge of supplies. There is a vast difference in the way people use materials; some, I believe, have a conscience in the matter of economy, but I am afraid many have not. The staff is often extravagant, especially in the use of dressings and drugs. Investigation of these two items in our hospital at one time revealed that economy in their use would mean a saving of thirty-three and one-third per cent. This has led to the putting in force of more stringent methods, including the use of substitutes where money can be saved and efficiency maintained.



Meetings of heads of departments every two weeks to discuss the work of the various departments and to ascertain if there is any lack of co-operation, any omissions or overlapping.

The reclamation of supplies for continued use also concerns us, particularly that of dressings, linen, blankets, paper, and rubbers. There are many processes known for the reclamation of dressings, nearly all can be reclaimed in some way. One might well separate them into two lots, outer and inner, or, unsoiled and soiled. The former can be readily sterilized and re-used, but the latter must be washed out, re-sterilized, and go through an extensive process.

Unmendable linen articles can be cut up and used for something else, as, for instance: a much used table cloth may make a few serviettes, or bath towels may make face cloths, etc. All that cannot be reclaimed should be sold to the rag peddler.

In the matter of drugs, prescriptions may be made more uniform if the hospital pharmacopeia is used. The number of doses should be specified, instead of leaving it to the pharmacist to decide. Carelessness in writing a prescription should be avoided, as the omission of the quantity required, the ward, the date, or the name in full, causes the pharmacist unnecessary loss of time in tracing up these details.

#### Economy in Food Important

Experience and a knowledge of prices and quality are as necessary in buying food as in buying supplies. The



Garbage tins should be inspected daily by a reliable authority—perhaps, as above, by the assistant superintendent.

food should be plain and substantial, retaining its natural flavor or taste as far as possible. The value of a good cook cannot be too strongly emphasized. The service of the food in our wards is of vital importance, and may really be the source of complaint more often than anything else in connection with the department. The subjects of complaint usually are that the food is cold when served, of poor quality, or unappetizingly served. Any of these things are very detrimental to the success of the hospital. In our institution we make the dietitian responsible for the whole food problem, for quality, for preparation, for distribution, and for service. As she cannot be in several places at once when food is being served, the head nurse is responsible to her for the service. Generally speaking, we use a selective service for our patients. Their tastes are consulted and initial helpings, not too large, are served. All left-overs, trimmings, or waste should be taken care of by some economy device. In our hospital we carry out the following economies:

**FAT—**

- (a) Trimmings used as substitutes for butter and lard in hospital cooking; balance sold to a restaurant.
- (b) Roast trimmings cleared and sold in five-pound tins.
- (c) Scraps used for the manufacture of green soap and hospital laundry soap.

From the above sources the monthly receipts are from \$50 to \$125.

**BREAD, BREAD CRUMBS AND CRUSTS—**

- (a) Used for food for laboratory animals.
- (b) Sold at one-half cent per pound for chicken food.
- (c) Used in kitchen for crumbing and with wheat flour for crumb muffins.

**VEGETABLES—**

The outer leaves of lettuce, celery, and green onion tops, are put into the stock kettles for vegetable soup.

**APPLE PEELINGS—**

Made into jelly for use in cooking.

**ORANGE AND LEMON RINDS—**

Candied, principally from oranges used in providing morning orange juice for children.

**JAM TINS AND MARMALADE TINS—**

Saved and returned, for which we get an allowance of sixty cents per dozen.

The above are only a few of the innumerable economies which you can effect in your own hospital by organized

is from the wards, and is burnable, and the bulk of the latter is from the kitchens and is saleable for food for hogs, chickens, etc. In our own case, after every possible extraction and reclamation, the Chinaman pays us \$150 per month for the remainder.

In leaving this subject of practical economies, let me recommend that, when you go back to your institutions, you look them over for every possible source of wastage, and put into practice every possible measure for conservation and reclamation.

The best publicity you can give your hospital is to send your patients out well pleased. This means competent care, a happy stay, and a good result. It may be only a little thing; a word or a little act of kindness, that will win the patient as a warm friend. On returning home his friends and neighbors all hear the hospital story, whether good, bad, or indifferent, and if it is good, the hospital will get the best possible publicity. If you can develop public confidence in your hospital you can enlist the sympathy of the public for any support you want. Use every opportunity possible to bring and keep your institution before the public, perhaps by inviting the public to visit the hospital on a certain day. One of the greatest successes we have ever had in this way was what I used to call our "New Year's Day reception," when for a few hours in the afternoon we opened our hospital to the public, having a well laid out itinerary, with demonstrations in each department. This became so popular that we were obliged to drop it three years ago, as we could not handle the crowds. Secure the cooperation of the press at all times. It is a medium of educational publicity, and information from the hospital of general interest can be given to it, so long as private matters or confidences are not disclosed. My experience with the press has been of the happiest nature, and during my administration in Vancouver I believe many hundreds of columns have been devoted to the hospital work in its various phases, all of which has helped greatly to develop the hospital spirit in our community.

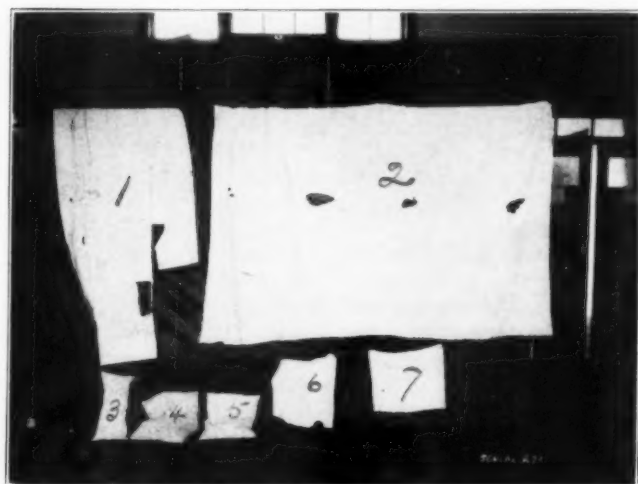
During the past year I have issued various hospital bulletins containing interesting data, to familiarize the patients and the public with hospital work. Lantern slides and "movies" render great service in publicity.

It is important that the hospital show itself always ready for service. Four years ago the government of Canada asked us to take three hundred returned soldiers. We said we would, although we had neither buildings, equipment, nor staff. In three months we were ready with a new hospital fully furnished, and equipped for three hundred and twenty soldiers. In the influenza epidemic the city asked us to handle the situation, from an institutional standpoint. This was done in short order and one thousand beds supplied with equipment and staff. Make your hospital measure up to its community obligation, for in so doing you are best serving the patients and the citizens.

In conclusion, allow me to apologize for attempting to discuss so many large subjects in one paper. Indeed, it is quite apparent to all that each of the questions raised in this paper would be subject matter for a paper or address in itself. However, ground is broken for discussion, and I hope that many practical benefits will be derived therefrom.

Happiness lies first of all in health.—George William Curtis.

When a man assumes a public trust he should consider himself as public property.—Thomas Jefferson.



Linen and rubber goods conservation and reclamation. Discarded rubber covers (1) from the operating room pads, are made over into covers for sand pillows (3), knee pads (4 and 5) for cleaners. Discarded table cloths (2) are made into serviettes (7), and balance unfit for this purpose used for dusting cloths (6), or sold to rag dealer.

effort throughout your departments. By all means be careful about your garbage tins. Inspect them regularly yourself. Here is where you get your key to wastage, especially in food and dressings. There are two classes of garbage around an institution which may, for convenience, be called dry and wet. The bulk of the former



## AMERICAN HOSPITAL ASSOCIATION ISSUES SERVICE BULLETIN ON STERILIZATION

THE American Hospital Association recently issued the following service bulletin to its institutional members:

Recently a manufacturer of sterilizing controls received a letter from a lawyer, stating that the daughter of his client had lately died in a given hospital from post-operative infection, and asking if this hospital was purchasing their controls. The letter also raised the question as to whether hospitals are ordinarily giving the matter of sterilization sufficient care and attention to meet the "reasonable precautions," as intended by law, the lack of which leaves no protection from damage suits.

This question each hospital must answer as to its routine, and must recognize that the care used is all that protects them from suits, from damages arising out of postoperative infections, which are likely to occur at any time.

### How Faulty Sterilization Occurs

Assuming that a bulletin upon this subject might be of value to some institutions, the question has been investigated and the following facts established:

From the manufacturers of sterilizers we have learned that faulty sterilization occurs, to their knowledge, in two ways: first, the sterilizers becoming so out of order that the steam does not reach the inner chamber. One case was reported wherein it was certain that no steam had reached the inner chamber of the sterilizer (daily used) for over a year. Second, misuse of sterilizers through ignorance of the instrument and the principles of sterilization. Several reports were presented in which the steam has been curtailed in amount or entirely cut off from the inner chamber "because it wet the dressings." This had been done by the nurse or orderly, entirely on his or her own responsibility, yet it is doubtful if this would in any way protect the hospital in case of suit, as "reasonable precautions" to protect the patient had clearly not been taken.

With the recognition that the institution is strictly responsible for the effectiveness of the sterilization, and that errors inviting damage suits are now occurring, the following principles and methods are presented. All these will be found in routine use in some hospitals.

### Principles and Methods Enumerated

1. An ordinary recording steam gauge, if not already a part of the equipment, should be connected with the inner chamber of the sterilizer. These gauges are inexpensive, obtained anywhere and easily attached. They are kept locked and the paper dial changed by a responsible person every twenty-four hours. The record is accurate as to the steam and vacuum pressure on the inner chamber throughout the day. One may discern at a glance if the sterilizer is in perfect order, if each sterilization has been proper, and if the steam pressure and vacuum drying were continued for adequate time. It prevents the hurrying of the last load, etc. The daily records should be filed in the superintendent's office, and inspected as part of the routine.

2. Sterilizing controls, which are now quite generally used in hospitals, are beyond any question reliable in determining whether sterilizing temperature surrounding the control has been attained, and maintained sufficient time to insure sterilization. With these controls it is

possible to definitely determine whether your routine can sterilize the middle of the package of three or six sheets. The difficulty of heat penetration into compact packages can be studied by these controls, and the routine of the hospital in the preparation of packages for the sterilizer can be made such as to insure heat penetration and make sterilization certain.

3. The above precautions will make it certain that any package which goes through the sterilizing process is absolutely sterile. One must, however, protect against contamination after sterilization and be certain that every dressing and article used as sterile has been through the sterilizing process.

4. Contamination of an unopened package after sterilization is possible only through insufficient covering and exposure to dust before drying. Care must be used to insure against thin wrappers or wrappers with small holes—two thicknesses of cloth outside of the dressings are much better than one. Unless the vacuum of the sterilizer is in good working order, dressings will come from steam sterilization too wet for immediate handling. This can be corrected by completely shutting the steam from the inner chamber at the end of sterilization, and leaving the dressings inside the sterilizer with the door open and the steam pressure on the outer jacket until dry.

### Making Sure of Sterilization

5. In the preparation and handling of packages for sterilization there are many possibilities of a package not sterilized becoming mixed in with sterile packages. It is possible to determine whether a package has been actually through the sterilizing process or not when it is opened at the operating table in the following way: place inside each package a slip of paper on which the date on which the package was prepared for sterilization has been written or stamped in any indelible, silver ink which writes red (obtainable everywhere). These inks will remain red wrapped in a package of linen almost indefinitely, if not sterilized. The heat from sterilization turns the color to black and the moisture causes the ink to run in the paper enough so that a slip blackened by a steam sterilization can readily be distinguished from a slip blackened from dry heat or from long light exposure. This method is quite inexpensive but satisfactory. The following story was obtained from a hospital using these slips, and where it was first supposed that it was impossible for non-sterile packages of linen to get mixed with the sterile. About one non-sterile package a month, as shown by red slips, is being opened in the operating room, and it can never be explained how it got mixed in. At one time a whole load of non-sterile packages was put in the cupboards with the sterile linen, and detected and sorted out, as opened, by the slips. While this may seem surprising to some, it should be said that the nurses and operating room attendants of this particular hospital clearly rank among the very best in this country. Therefore, it is likely that slips in the handling of packages are occurring in many hospitals. This can and should be detected before damage is done, by the use of these silver inked slips, or perhaps by some other devices. However, no devices other than the sterilizer control first mentioned, or these paper slips with the silver ink, have come to our attention.



## NURSING AND THE HOSPITAL

Conducted by CAROLYN E. GRAY, R.N.,  
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### CENTRALIZATION OF TEACHING IN SCHOOL FOR NURSES

By JEAN I. GUNN, R.N., TORONTO GENERAL HOSPITAL, TORONTO, ONT.

IN PRESENTING the subject of centralization of teaching in schools for nurses the discussion will be limited to an experiment being carried on at present in the city of Toronto. The same system may be in operation elsewhere, but it has not been possible to secure any definite information of similar experiments in other localities.

To those who are not familiar with the city of Toronto, a brief outline of the hospital facilities may be of interest. There are, in all, eleven public hospitals besides the smaller private hospitals. Several of these public hospitals are affiliated with the University of Toronto and are therefore teaching institutions for the Medical School, while others have no connection with the University. All, however, conduct training schools for nurses ranging in size from 250 to 12 enrolled students.

Before the recent war these schools carried on their work quite independently, with no interrelationship. Then with the war came the shortage of medical men, not only in private practice but particularly on the University staff and the staffs of the different hospitals. All were overworked and new conditions in our training schools were consequently brought about.

As time went on we found these conditions. Medical men already teaching in the University were teaching the same subject in two or three schools for nurses. In one case, which was typical, a lecture course covering eight hours was being given by one surgeon in three schools, which meant twenty-four hours instruction instead of eight. Conservation of the instructor's time was, therefore, one of the outstanding reasons for the organization of a central teaching course. Another difficulty was the inability of the smaller schools to teach the subjects as outlined by the curriculum of the Graduate Nurses' Association of Ontario. These schools were expected to meet this standard to make their graduates eligible for membership in professional organizations. Under the conditions existing at that time it was not possible for them to do so. A busy physician might make the time to teach a class of forty to seventy students, but would not feel that he could spare the time to teach a group of four. Yet these four students had to be taught.

In 1917 it was, therefore, decided to make an effort to centralize part of the teaching, particularly the lecture courses given by physicians. As none of these schools had a class room sufficiently large to accommodate the

students, the University of Toronto was approached and a class room in the Medical Building was provided. The University, while extending this courtesy to the training schools of the city each year, has no connection with the lecture course, but simply provides the necessary class room.

#### Committee of Superintendents Centralize Certain Teaching

A committee was organized which consisted of the superintendents of nurses of the different schools. This committee has, since its organization, been responsible for the arrangement of the entire course. In regard to instructors the committee decided to leave the appointment of instructors in the different lecture courses to the medical faculty of the University. Each year the nurses' lecture courses are assigned in this way to some member of the teaching staff. While the schools have no direct affiliation with the University, the teaching in these subjects is planned for unofficially by the medical faculty.

Of the eleven schools, nine entered their students in the centralized course. It has not been possible to arrange as yet for the teaching of all theory in this way and the individual schools continue to teach certain subjects. The following subjects are taught in the centralized course: in the first year; general medicine, eighteen hours; bacteriology, twelve hours; hygiene and sanitation, twelve hours; in the second year; surgery, twelve hours; gynecology, eight hours; orthopedic surgery, six hours; infectious diseases, ten hours; mental diseases, four hours; in the third year; obstetrics, eight hours; pediatrics, twelve hours; medicine, six hours; surgery, four hours; ear, nose, and throat, three hours; eye, three hours.

In addition to the above, the eleven schools entered their junior students for a course in chemistry arranged and given by the Central Technical School. This course covers a period of three months, with one hour class and one hour laboratory work weekly. This has been of great assistance to all the schools, as none were properly equipped to teach chemistry. The centralization gave the students the advantage of expert instruction and the use of a laboratory which could not possibly have been duplicated in any of the eleven training schools.

Another course into which all the schools are cen-

tralized is offered by the University of Toronto. This course in public health nursing is arranged by the University especially for the student nurses, to give them some idea of the scope of public health and social service work and to familiarize them with the many fields of work. One hour a week during the senior year is given to this course. In connection with it the Department of Health of the city receives the student nurses for a period of two months field work. This practical work is of great value to the student, as it gives her an opportunity of associating the theory taught with the conditions that exist and the means adopted to remedy them. The time is short, but long enough to impress the student with the need for public health activities.

#### Examinations Made Uniform

The examination in chemistry is given by the staff of the Central Technical School, and the University of Toronto gives the final examination in public health nursing. It has not been possible yet to arrange a system of credits in the University for this work, as the course taken is a specially arranged course and not one regularly arranged for full time students. In all other subjects the examination is set by the instructor and the papers are read by an examining committee appointed by the training schools. The examinations are written and are held in the different schools at the same hour.

#### Advantages of Centralization Outweigh Disadvantages

Every system of education has its advantages and disadvantages. One of the outstanding disadvantages of this system of centralization is the fact that the students are absent from the ward longer than when the teaching was done in the individual school. The student has to have extra time to enable her to go to and from the University class room. While this is a disadvantage from the standpoint of the direct administration of the nursing of the hospital, it is rather an advantage to the student. She has a walk in the fresh air and a change of atmosphere which cannot fail to be of direct benefit to her.

Another disadvantage is the fact that the students are taught in a much larger group and do not receive the same individual help and instruction which is possible in smaller classes. To counteract this defect, many of the schools arrange for short conferences on the lecture given, or hold bedside clinics in the wards in order to link up the subject taught with the actual daily care of the patient.

The advantages naturally fall into three classifications: those which are general to all schools; those especially relating to the larger schools; and those relating to the smaller schools.

Of the general advantages, the most striking is the better teaching in these subjects. The instructors give careful preparation to the subject and are experienced in teaching, which unfortunately the physicians who are often called upon to assist the teaching of student nurses are not. The majority of nurses of today can easily recall lectures in their course that had received no thought and consequently no preparation on the part of the physician. Another advantage is the promotion of uniformity of teaching and standardization of the curriculum of the city schools. A spirit of competition is created by the system of uniform examinations. Some students who do not feel a great deal of anxiety concerning their individual standing, curiously enough, have a certain interest and pride in the standing of their class and training school. It is also beneficial to the student to meet students from other schools and to obtain thereby a broader outlook.

From the standpoint of the hospital, the centralized system of education has brought about a close cooperation between the schools for nurses, linking them up with a common interest and undertaking.

From the standpoint of the physicians and surgeons who for so many years have given so freely of their time in nurse instruction, the centralized teaching is a great saving of time. So frequently the same physician or surgeon gives the same course of lectures to different groups of nurses, and is thus forced to cover the same ground three times or even four times during a term. In these days when everyone's day is more than full, the economic value of centralized education cannot be overlooked.

The advantages specially applying to the large schools are not as vital as to the smaller schools. The larger school is always in a position to arrange proper education in all subjects for its students, but this system gives the larger school an opportunity to assist the smaller school to meet the same standard, which would be impossible for it to meet otherwise. The chief advantage, therefore, is the knowledge that the large school is not limiting its activities to its own field, but helping to meet the need of the community where all hospitals and students are necessary for the care of the sick.

The advantages to the small school are very apparent. It is provided with a means of teaching its student nurses according to the approved curriculum. The students know they are receiving the same instruction as the students in the large schools and that they must reach the same standard, for the examinations are uniform.

#### Single Director of Nurse Education Would Facilitate Teaching

The future of this plan of teaching has still to be decided. The committee feels that the appointment of a director of nurse education for the hospitals of the city is most essential. This innovation will probably be the next development. If such an appointment is made, the expense will be shared by the schools in proportion to the number of students enrolled. A director is really essential to link up the teaching in the lecture course with the supplementary teaching in the individual school. At present this connection is left to the school and no uniformity results. Another reason for this appointment is to save the time of the hospital executives, as nine or eleven schools, as the case may be, send a member of the executive staff with the students to each lecture. One such person is sufficient if she has some connection with each school to enable her to plan the necessary supplementary work.

One of the changes that the committee is hoping to effect is to pay the instructors of this course. At present the physicians and surgeons give their valuable time voluntarily and would continue to do so very willingly. In fact, the hospitals could never adequately pay these instructors for their time; but if some basis of payment were adopted, the schools would be much more independent and self-respecting, as they would at least have made an effort to meet their obligations.

#### University Education for Nurses Final Goal

The last dream of the committee will perhaps remain only a dream. It is that some time in the future the education of the student nurse in our city schools will be undertaken by the University of Toronto in close cooperation with the board of managers of the hospitals. The hospital can be the working laboratory for the student nurse as it now is the working laboratory of the student in medicine. The medical school of any university is



very closely affiliated with the hospitals. The carrying on of this branch of education in any university is directly dependent on the cooperation and good-will of the hospitals in its vicinity.

Why should this cooperation and good-will be as one-sided as it is at present? The hospitals have fields of practice that the school of medicine needs for its existence and development. The universities have fields of medical knowledge very much needed by the hospitals for their student nurses. Is it, then, not logical to expect this affiliation between hospital and medical school to extend to both groups of students? The rapid development in public health work throughout the United States and Canada shows clearly that the community demands and expects to receive as much help and advice in disease prevention

from the graduate nurse as from the graduate in medicine.

This principle applies not only to the public health field. The scientific treatment of disease in our hospitals depends largely on the intelligent cooperation of the nursing staff. The day when the nurse's responsibilities were limited to the actual bedside nursing care of the patients is long since past. Is it, then, logical for the medical faculties of universities, the federal, state, provincial, and municipal governments and the public to expect expert nursing service in all branches of medicine, curative and preventive, when the best facilities for the nurse's education are withheld? All other branches of teaching are finding a place in the educational efforts of both countries. Why not the profession of nursing?

## VASSAR TRAINING CAMP FOR NURSES HOLDS ENTHUSIASTIC REUNION

VASSAR College was again, on November 26, 27, and 28, the camping ground for the reunion of the Vassar Training Camp. This was the realization of a dream long cherished by its graduates. Out of the 435 enthusiastic college women who came together at Vassar's classic halls that memorable summer of 1918, 169 have finished the two years in training schools for nurses throughout the United States, and of these, about 120 enrolled for the Camp's first reunion. With them met a few members of the Training Camp faculty; superintendents, or representatives from the training schools who affiliated with the Camp; and others interested in problems of nursing.

An outline of the program of the three days follows:

On Saturday afternoon there was a discussion on the respective limits of student government and authoritative control in the training of pupil nurses, the leaders being Miss Margaret Canington, University of Missouri, graduate of the training school of the Rochester General Hospital, N. Y.; Miss Mary Millman, University of Toronto, graduate of the training school of Bellevue Hospital; and Miss Helen Wood, R.N., superintendent of nurses, Barnes Memorial Hospital, St. Louis, Mo.

After a six o'clock dinner, brief speeches were given by Miss Adelaide Nutting, R.N., professor of nursing, Teachers' College, Columbia University; Dr. Edward H. Hume of the Hunan-Yale Medical Work in China; Miss Martha Wilson of the Central Council for Nursing Education, Chicago.

At eight o'clock there was a public meeting in the art lecture room in Taylor Hall, presided over by President Henry Noble MacCracken. The speakers were Mrs. John W. Blodgett of Grand Rapids, originator of the Training Camp for Nurses; Professor Charles Edward Amory Winslow, professor of public health, Yale College of Medicine, professor in the Vassar Training Camp for Nurses; Major Julia C. Stimson, dean of the Army School of Nursing and formerly in charge of the nursing staff of the American Expeditionary Force in France; Professor Herbert E. Mills, dean of the Training Camp for Nurses.

At nine-thirty a reception was held in the art galleries of Taylor Hall.

On November 27, in the morning, a discussion was carried on of how the correlation of theoretical and practical work in training schools for nurses can be improved. The leaders were Miss Priscilla Barrows, Wellesley College, graduate of the training school of the Presbyterian Hos-

pital, N. Y.; Miss Leila Truick, University of California, graduate of the training school of City Hospital, New York City; Miss Carolyn E. Gray, R.N., assistant secretary to the Committee on Nursing Education, formerly superintendent of nurses, City Hospital, New York.

In the afternoon a discussion was arranged on how can the entrance of the right kind of young women into nursing be encouraged by an enrichment of the life of the pupil nurse, intellectually, recreationally, spiritually and in its relations to the outside community? The leaders in the discussion were Miss Alberta E. Chase, University of Michigan, graduate of the training school of University Hospital, Ann Arbor, Mich.; Miss Ruth A. Walker, Boston University, graduate of the training school of Boston City Hospital; Miss Eula Whitehouse, University of Texas, graduate of the training school of City Hospital, New York City; Miss Laura R. Logan, R.N., superintendent of Nursing School, University of Cincinnati.

At eight o'clock an entertainment was held, with dancing and refreshments.

On November 28, in the morning, there was a memorial service in the Chapel, in memory of those members of the Training Camp for Nurses who died during the epidemic of influenza, while in service in the hospitals. The speaker was Miss Annie W. Goodrich, director of nurses, Henry Street Settlement, New York, assistant professor of nursing and health, Teachers' College, Columbia University, dean of the Army School of Nursing, 1918-1919.

### Résumé of the Speeches

The points that were emphasized in the discussion, "The respective limits of student government and authoritative control in the training of pupil nurses," were whether it should remain in the home life only, or whether it should be carried over into the hospital. The consensus of opinion was that at the present stage of development in training schools, it was applicable only to the home and social life of the pupil nurse. This idea of student control has worked out very successfully in the training schools connected with the Toronto General Hospital, Rochester General Hospital, and University Hospital, Ann Arbor.

Of the after-dinner speeches, Miss Nutting's address was one of welcome and encouragement to the new recruits. Dr. Hume brought greetings from Miss Nina Gage, assistant dean of the Training Camp, at present engaged in introducing public health methods in the interior of China,



and he related various anecdotes of her work among the Chinese. For the 400,000,000 of the population there are but 200 trained nurses, or one for every 2,000,000. Miss Wilson of the Central Council for Nursing Education outlined the publicity campaign among the different hospitals in the Middle West, and was interested in discovering why the recent graduates from training schools were not influencing their friends to follow in their footsteps.

Friday evening the graduates were officially welcomed by President MacCracken with the message that, since Vassar College always stood for health, Vassar again pledged herself ready and willing to support and aid any further conferences looking toward that end. Mrs. Blodgett, sponsor for the Training Camp, gave a brief history of how it came into being. Professor Winslow reviewed fully the "Vassar Idea"; that of an intensive theoretical course in a college, followed by practical work in cooperation with a hospital. Professor Winslow believes that training schools for nurses must be independent educational institutions like the medical colleges. This is largely a matter of dollars and cents. Major Stimson spoke about the benefits to be derived from the Army training schools, particularly as to travel. Professor Mills gave a brief résumé of the numbers graduating from camps, those who continued in the hospital, and those who followed other pursuits.

On Saturday morning, in the discussion on how the correlation of the theoretical and practical work in training schools for nurses can be improved, the general opinion was that just at present the curriculum of training schools does not seem to have a definite place for correlation of theory and practice. A possible solution is the training school, independent of the hospital, with the nurses trained at public expense for public service. The duty of those connected with training schools is plain—to bring about public understanding of the situation so that there may be training schools that are endowed and self-supporting.

On Saturday afternoon suggestions for encouraging the right kind of women to enter nursing were fully discussed under the heads of educational, social, and spiritual advantages to be derived during training. At the close of this session a short business meeting was held, at which it was unanimously voted that Dean Mills remain permanent secretary-treasurer of the Camp, and Miss Frances Buffman was chosen to continue as president. An advisory board of three members, namely, Miss Priscilla Barrows, Miss Margaret Canington, and Miss Ruth Kittinger, was elected to act with the president and secretary.

The evening was spent in dancing and "stunts" furnished by the various groups.

On Sunday morning, in the college Chapel, a wonderful tribute was paid by Miss Goodrich to the seven young women who gave their lives during the early months of training.

Enough cannot be said to fully express the gratitude of the Camp for the kindness and hospitality that Vassar has always shown. The officials of Vassar College, through their untiring efforts, made possible the realization of the dream of reunion, and a special tribute of thanks is due to Dean Herbert Mills, who has proved himself so devoted a friend to the graduates of the Vassar Training Camp.

The test of civilization is the estimate of woman. Among savages she is a slave. In the dark ages of Christendom she is a toy and a sentimental goddess. With increasing moral light, and more universal justice, she begins to develop as an equal human being.—Curtis.

## A YEAR OF RED CROSS WORK IN THIS COUNTRY AND ABROAD

More than fifteen thousand American communities were touched by the activities of the American Red Cross during the year ending June 30, 1920, according to the annual report of the organization covering that period.

During the year a Red Cross Department of Health Service has been organized. Through it have come into active operation, to June 30, 1920, 128 health centers, from which radiate innumerable activities designed to improve the health of the community, while 435 Red Cross chapters were actively engaged in disease-preventive work. The Bureau of First Aid to Injured was transferred from the Department of Military Relief to the Health Department January 1, 1920. In addition to the 6,000 certificates issued to those who had taken regular courses, 465 medals have been awarded, ten first aid contests have taken place in various states, 1,500 medallions have been distributed, and 775 junior members have been awarded emblems. The life-saving, or water first-aid service, has been extended the past year by the addition of twenty-nine Red Cross life-saving corps and the enrollment of 1,500 new members, of whom 503 are women. There is now a complete woman's corps in this branch of the service.

The Health Department also includes a Bureau of Medical Social Service, which had under its supervision June 30, 1920, 312 Red Cross employees, serving fifty-two public health hospitals. Of this number 125 are hospital social workers, and during the year, 30,422 patients have received from this bureau some form of Red Cross service.

In the Department of Nursing the fiscal year was one of transition from military to civil activities. As the Red Cross has assigned 20,000 graduate nurses to war service, the Department of Nursing felt responsible for their proper return to civilian life, and to this end has conducted a bureau of information which has aided in placing at least 2,500 of those who have sought its aid. In this connection, also, the Red Cross appropriated \$16,000 for the establishment of a convalescent home for sick nurses. Of the 604 nurses attached to the various American Red Cross commissions in Europe when the armistice was signed, all but 116 had returned to the United States by June 30, 1920.

During the year, also, the Red Cross has cooperated closely with other national organizations to recruit student nurses for public health work.

One of the important results of the work done by the Red Cross Health and Nursing Departments has been that thirty-five states have practically adopted a uniform method of working in connection with the Red Cross, whereby a bureau of public health nursing has been instituted under the direction of the State public health officer.

The part which the American Red Cross took in the organization of the League of Red Cross Societies was purely educational; but in this way it blazed the trail for the League, which aims to extend the distress preventive and constructive brotherhood throughout the world. At the first conference, held at Geneva, at which representatives were present from twenty-eight countries, it was decided to adopt the methods which have been worked out by the American Red Cross as the plan to be followed by all.

Our national health is physically our greatest asset. To prevent any possible deterioration of the American stock should be a national ambition.—Roosevelt.

## DIETETICS AND INSTITUTIONAL FOOD SERVICE

Conducted by LULU GRAVES,  
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### FOOD PROBLEMS IN RECONSTRUCTION

By DR. ALONZO E. TAYLOR, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA.

EVERYONE familiar with the efforts of the United States Food Administration realized that the work of the women, trained in home economics and scientific dietetics, was in each state the basis of the public success of our programs. The definition of a program was in itself often not difficult, but the daily extension, the daily support, the continuous reinforcing of the lesson, was something that naturally fell upon the trained women of each community. Without their assistance, the continued visualization by the American household of its duty in the war could not have been maintained.

Naturally it also falls within the function of the same groups of trained women to face now the problems of reconstruction. Those who imagined that, after the war was over, we should be permitted to resume the existence of five years ago precisely as we left it, to take up again our problems and pleasures as we left them, have certainly by this time come to realize that all such expectations are doomed to failure. The world will not again be what it was six years ago—at least not within our period of activity. There has been such an enormous destruction of materials and human energies throughout the world, that it is not possible to hope, except in the event of discovery of very unusual new resources, to have the world restored in an appreciable space of time to the position it occupied before the great war.

#### Deflation of Prices Inevitable

During the war it was the function of the trained women of our country to teach all women conservation, the elimination of waste, and substitution. Today the world faces a deflation in prices. Deflation of prices means, primarily, for the moment at least, a consumer's market. The degree to which this may extend, and the results that may be expected to follow from such a condition, depend largely upon the future attitude of the consuming classes themselves. It is clear, from the history of previous periods of price inflation, that the maintenance of reduced prices depends indirectly, to a large extent, upon the consuming public, since production must not be undermined.

A year ago in this country we were all living in a fool's paradise. Everyone seemed to have an unlimited bank account. Everyone wanted everything that could possibly contribute in any way to what we defined as the attributes of well-being. All classes wanted the broadest and the highest standard of living. It was clear at that time that we were consuming in excess of a safe estimate of our resources, and that eventually the price for extravagance

would have to be paid. The question that concerned the men who were considering the problem theoretically was, upon whom the penalty would first fall, and how heavy the punishment would be. We have now come to the break. Prices are falling. They must fall. We have the psychology as well as the fact of falling prices. The consumer today refuses to buy, not for the opposite reason of his willingness to buy a year ago,—that he had money then and has no money now,—that is not the primary motivation at all. The consumer found to his bitterness a year ago that by his buying he accelerated the trend of prices upward, and he reasons contrarywise that by refusing to buy he can now accelerate the trend of prices downward. This is correct.

The only question is, to what extent is it wise to accelerate the curve of prices downward? Now a panic is little more than an accelerated run of price deflation. If prices are to fall, and they must fall, and then, on the basis of reduced prices, if consumption is to be maintained, it is apparent that the refusal of the consumer to buy cannot go to the point of lowering production so profoundly as to make it unequal to the future demand. In other words, the ideal method of price deflation is to taper off gradually. If deflation occurs precipitously, it leads to such profound disorganization of the processes of production that later, when the demand increases, supply cannot be maintained and prices again rise, or in any event, exhibit startling instabilities.

#### Unstable Prices Worse than High Prices

We are gradually coming to learn that unstable prices are worse than high prices. If you were to ask a German what the trouble with the mark is, he would say that it was fluctuating. If you could fix the mark at two cents, every manufacturer in Germany, and everybody else, would be glad. When the mark was a cent and a quarter, there were large importations of cotton. The mark rose to two and three-quarters cents, nearly three cents. This looked fine to the theorist, who says that we measure the recovery of Germany by the recovery of her currency. But when the mark rose from one and a quarter to two and a half cents, it cut the price of the sale of that cotton to the Germans, and to the outside world, in two, and every importer and manufacturer lost money. They therefore stopped importing. When the mark reached three cents, the imports and exports of Germany stopped. In these fluctuations, up and down, first the manufacturer, importer, and exporter lose, and then the banking



world loses. The result is a complete disorganization of the forces of production. What is needed in prices is a stabilizing tendency, which shall enable everyone connected with production to forecast in advance the probable costs.

No man today can expect basal production to recover within a year, with price deflation carried to the point where some of our raw materials are already, within six months, fallen to a plane of lower than pre-war values. I have just come from Kansas, where I had the privilege of speaking before the Wheat Exposition. There are men in the Middle West who farm land that is now worth from fifty to one hundred dollars an acre more than it was before the war, and are selling oats for the same price they received seven years ago. There are men in the West who are paying fifteen dollars an acre rental, and selling forty bushels of oats to the acre for forty cents a bushel—in other words, the crop is no more than paying the rental. Cotton, wool, and hides are selling below cost of production; wheat also, in some sections. Now these precipitous descents in prices, that are apparently to the interest of the consumer, are eventually, if they are carried to excess, to his detriment, for the man who wants grains next year may find that the farmer cannot plant them at that figure. No price depreciation must be so sudden and depressing that in the year to come it destroys the labor of the present year.

#### Efficiency of the Diet the Problem Today

A true deflation is one that is continuous, equitable, and sequential, and not sudden, with wide fluctuations. Nevertheless, the consumer of foods feels the psychology of the falling prices. He already has the fact of the falling income. The relation between falling prices and falling income constitutes for the women in the household the problem of the next twelve months. Is the price curve to fall more rapidly than the curve of income; or is the curve of price to be a widely fluctuating one, and eventually the curve of income to fall disproportionately to the curve of price? The housewife is thus compelled to regard the diet from the point of view of the efficiency of the diet. The point of view of wanting the best at any price can no longer be followed in any class. The lesson of the efficiency of the diet, the control of the purchases of the American housewife, and her instruction in the formulation of the family diet from the standpoint of correct physiology, and also from the standpoint of her economic situation, constitute the problems that trained women during the next year will be compelled to face in their everyday work.

The standard of diet in Europe as a continent is very low. It is higher in England than it was before the war, for the poorer class, but that is largely a question of governmental subsidy. Everywhere in Europe where the government is not paying for the food and giving it away, the standard of living is very much reduced; and in most countries even where the government is paying for the food and giving it away, the same condition exists. Europe, outside of Russia, is consuming about 80 per cent of the bread grain she consumed before the war. She makes up for the reduction in the amount of wheat and rye consumed by milling it higher. They don't mill grain to 70 per cent in Europe. They extract it to 80 or 90 per cent, and thus the volume of flour is little lower than it was before the war. The reduction in consumption of animal products of all sorts cannot be made up. There is an increase in vegetable food, but this is poor in calories. Therefore, Europe is on a poorer diet. She is doing less physical work than before the war, her inhab-

itants have suffered reduction in body weight. In addition to scarcity of food supply, there is scarcity of clothing and coal. The clothing they use is thinner, and the houses are not heated in Europe to anything like the pre-war temperature. This exaggerates, of course, the effect of the low caloric intake. Fortunately, they have had two mild winters in Europe. If this winter should be the usual cold one, the present coal supply, the present clothing, and the present diet of Europe will make such a winter almost intolerable for millions of people.

#### Diet Must Be Normal

Now the Europeans, when they had to cheapen their diet, did so by making the diet more vegetarian, especially was this done in Central Europe. The Germans were not especially heavy consumers of meats; contrary to popular belief, they did not consume as much meat as the British and Americans did. But they were heavy consumers of fats. The Germans used to believe that sauerkraut was a cabbage dish. They have learned that sauerkraut was a fat carrier, and without fat the national dish of the diet fails. The German diet is today very low in fat. If the total calories are reduced 15 or 20 per cent, the proportion of the calories in the form of flour must be very much increased. This is true of all countries. In Great Britain before the war bread was about 37 per cent of the total calories; for the last three years it has been 50 per cent. In France it was over 50; it has risen to 60 per cent. In Italy it was 60; it has risen to 70 per cent. Today Poland and Austria have as cereal a diet as Japan had before the war. The tendency of the diet in Europe has been to be orientalized in the direction of a large cereal intake.

Now an abnormal and restricted diet of course serves when it has to serve. As a diet of compulsion it is acceptable, as a diet of choice it is impossible. The problem in this country is to guide Americans in a rational restriction of the diet, with the preservation of its attractiveness, and without producing an abnormal psychology. We don't want the practice of food substitutes revived in this country in any attempt to influence the diet of the American people, because it will not work in peace times. The war diet floated upon the exalted atmosphere of patriotism. In the guidance of the American kitchen toward the development of a future diet that shall be saving, we must bear in mind that it must appeal to the normal psychology; it must be regarded as a normal and correct diet. The future diet must at least be what the diet was, let us say fifteen or twenty years ago, when it was much more simple than it has been during the last year.

#### Agricultural Conditions an Aid

A great deal of the possibilities in diet reform depend upon our agricultural conditions. Fortunately, in this direction we are aided and not opposed. We have enough wheat in this country to sustain an over-normal wheat consumption without restrictions, and still sell two hundred and forty million bushels of wheat to Europe. She will hardly be able to pay for it by any known method of finance, outside of international credits. There is no purpose in saving wheat in this country, no matter how badly Europe needs food, in order to send that wheat to her, because it is not a question of indispensability, as it was during the war. Europe will be able to find in the world any amount of wheat she is able to pay for, without any restriction of wheat consumption in North America, Australia, or the Argentine. It is not a question of substitutes. On the contrary, it is possible that



the European will be doing the substituting, for price reasons.

The Central Europeans prefer rye if they can secure it. Rye is 20 per cent cheaper than wheat, and they will import all the rye from this country that they can secure, to meet requirements. Of course, a good deal of our rye does not meet milling requirements, because, whereas only a small proportion of wheat is not constituted to make good flour, a large proportion of the rye is only adapted for animal feed or for distillation. Nevertheless, Europe will first take rye. She will then purchase wheat. Europeans already have all the barley they can possibly use as human food, they take it from their animals. If they import barley from the outside world, they would not import it for the purpose of making flour, but for feed, and then from their own barley select that suitable for milling and make that flour, because it is cheaper. Europe will not import maize from the United States, for the crop in Italy and the Balkans is good. Southern Europeans will of their own accord employ maize in their diet more largely than in the past. Northern Europeans could use a 55 per cent extracted, degerminated corn flour, but they don't call for it; they would have the same problem of importing, and the mere fact that corn flour is somewhat cheaper does not modify the financial difficulty to a great extent. In any event, if they import maize they will not import it from here, but from the Argentine, where it is cheaper.

#### Exports to Europe

We must therefore look forward to the situation that, out of the record crop of grains in this country, we will export only wheat and rye to Europe. This makes the other grains and all the other feeds available for an extended output of animal products of all sorts. We will mill perhaps 30,000,000 bushels of wheat less this year than we did last year. On the other hand, our extraction of flour is lower this year, so that there is in each ton of grain more mill feed. This is of very great importance, because the chief dairy sections of our country are located in close proximity to the large milling centers.

We will have a somewhat larger crop of cotton, which means a somewhat larger crop of cotton seed. If the cotton seed is higher than nitrate from Chile and tankage from Chicago, the grower will sell it, and it will come north in the form of dairy feed; if it is cheaper, he will put it back in the soil as fertilizer. The fall in the price of cotton fiber tempts the grower to hold up the price of seed. In other words, if we have a 10 or 12 per cent increase in the cotton crop, this does not mean that we shall have 10 or 12 per cent more cotton seed available as feed. On the other hand, we have a larger amount of barley and rye available, because we have no production of malted and distilled liquors, and this means that these grains will be more available for feed than before. We have in the West a large crop of all forms of coarse grains. We have a bumper crop of corn, with the carry-over about 3,400,000,000 bushels. The country was never so long on feed as at present. This would naturally mean, other things being equal, with a stable price in view, a large production of animal products at a low price. If this could occur, it would provide one basis for reduction in the cost of the diet in the American home, without material change in the direction of outlay. Unfortunately, however, this calculation runs counter to the fact that we have not the animals. We have lost about 10 per cent of cattle and 6 per cent of swine in the last two years, by special counts made on the

first of August of this year and last. So we have the anomalous situation of 18 per cent above normal in feeds, 10 per cent below normal in cattle, 6 per cent below normal in swine, and no possibility of making it up this year. Therefore, no matter to what extent the price of oats or corn may fall, even if to the pre-war level, it cannot be expected that a large volume of animal products above that of last year can be secured, on account of the scarcity of animals.

#### Market Demands Dropping

To what is the scarcity of animals due? It is due to the inability of the farmer to see a continuation of the market demands of the past two years. Three years ago we exported a very large amount of animal products; two years ago it was still large; last year it dropped heavily; next year it will probably drop back to the pre-war level. This has been due to the fact that three and two years ago we were selling animal products to Europe on governmental credit. Now Europe does not import cash lard or beef as against cash wheat. Europe imports wheat because it gives the most calories per dollar. The result we may expect is that the exportation of animal products will descend heavily.

What will the farmer do with the limited amount of cattle and swine, and the unlimited amount of feed, which he cannot sell? All the grains are sound and dry and will not decompose, so he could keep them over for one or two years. But the holding of crops means credit facilities which he does not possess, unless he can secure an extension of credit, which at present does not seem possible. The farmer must attempt to market as much as possible this year. He may finish for market a larger percentage of the animals than ordinarily, which means that the count of animals would be still further reduced in another year; in other words, kill off more cattle and swine in order to get rid of the feed. Or he will feed the animals to heavier weights. When the farmer does this, he disturbs certain price relations which are based upon taste. In one case he will feed in the direction of public taste; in the other, he will feed in opposition to public taste. The farmer who is feeding bees to heavier weights will be feeding in opposition to scientific authority; the older and larger the animals, the lower the return in meat to the unit of grain employed. The efficient method is to produce baby beef, not three and four year old steers. But in order to get as much grain as possible into the final product, since he can count his corn of little value unless he can get it into the form of meat, the farmer will be tempted to feed his cattle much longer, and to heavier weights. The public likes beef from heavy-weight cattle. These furnish the big cuts that the hotels and restaurants want, just as our own army and navy, during the war, made absurd demands upon the Food Administration for the largest carcasses. The taste of the American public is toward cuts from heavier beef. Therefore, if during the course of this year the farmer does what we think he will do to get rid of his corn and feeds, you may find that the discrepancy that exists now in the price of choice cuts and secondary cuts in the meat shops will become less marked, or possibly disappear. The characteristic thing today in the meat markets is the high price for choice cuts, with moderate prices for the so-called secondary cuts, and losing-money prices on poor cuts and on the by-products. The public's predilections for certain cuts is evidenced in the buying price. Before long you may find the price of the choice cuts reduced largely, and prices equalized. The other day, when corn sold at ninety

cents in Chicago and seventy cents in the western plains, prime steaks registered a very high retail price. Now this discrepancy should disappear. Certainly the feeding for larger beeves will please the American customer.

### Farmers Will Feed Animals More

It will be just the reverse, however, when it comes to hogs. Public predilection is for lean bacon and small hams. The public likes the products of a pig weighing not more than one hundred and fifty pounds. If the farmer, in order to get rid of his feed, feeds the animals to a much heavier weight, this will mean that ham and bacon of the kind that Americans like will become scarce, that mess pork, large hams and lard will become plentiful. The price of these three may be counted upon to fall, whereas the price of the others may be maintained or rise. We will be offered the kind of products that we care less for, except in so far as the use of lard in the kitchen is concerned. The final result of the operation will be to reduce the price of heavy hogs, which will still further increase the difficulty of the farmer. It may make the cost of the choice hams and bacon higher than they are now, unless the public declines to buy at those prices, and even with the small stock, producers are compelled to reduce the prices. The tendency, therefore, will be to increase the consumption of beef, and decrease the consumption of pork, partly as an expression of price, and partly as an expression of taste relations. This is not what we desire. What we need is an increase in the production of milk. It ought to be possible to accomplish this under the present circumstances, where the drift of labor back to the farm has clearly set in. We may be assured that the price of feed will fall. Certainly feeds—gluten, for example—are today almost a drug on the market. We anticipate a progressive and continuous fall in the price of the protein concentrated feeds. This, together with the return of labor to the farm, will enable the American dairy to increase the production of milk. Vegetable oils are cheap now, this means cheap margarine to compete with butter, and cheap lard compound to compete with lard.

One of the things that enables a stable price to be maintained is variety of uses and diversity of buyers. During the recent years we have had a moderate export of cheese, a good export of butter, and a large export of condensed milk. These exports are certain to decline. When Danish butter comes to New York and undersells ours, it is impossible to believe that we can continue exportation of dairy products. We are now sending condensed milk to Europe only as a part of relief programs. The volume of milk which Asia, the West and East Indies, etc., took from us before the war is not enough to support the present condensaries throughout the country with more than a normal activity. Some of them are compelled to close down. As these condensaries close down, they will throw the milk back upon the dairy. In the reduction of cattle that has occurred during the last year, fortunately only a slight reduction in milch cows is included. The cities must consume more whole milk.

### Bread and Milk Most Important

We must centralize the American diet, for the period of reconstruction of prices, around bread and milk, where it belongs, not around bread and meat. Fifty per cent of the calories in cereals, (bread), and 20 per cent in dairy products would be the foundation of an ideal national diet. You must preach this at all times, that valuable as meat is in many ways, it is not to be regarded as comparable with milk in the diet, but only as an imper-

fect substitute for milk. During the war Graham Lusk taught correctly and effectively the priority of milk over meat. The American diet, if it is to be maintained in efficiency for all classes, must be within the buying power of the classes of lesser means. Otherwise, in the reconstruction of the family budgets, the most essential article may go out, and less essential articles will to some extent be maintained. If the farmer uses his corn to produce heavyweight hogs, and throws upon the market lard at a low price, the tendency will be to replace milk in the home with lard, both for cooking and direct consumption. This would put the people of our cities in the position which the mill operators of the South have occupied for many years, and certainly with deplorable results. If choice is to be determined solely by price, then there is a likelihood of the public consuming lard or lard compound rather than dairy products. It is therefore imperative that dietitians should teach their communities that under no circumstances should the milk of the diet be reduced. Reductions in price may be attained in many directions, lowering of milk consumption is not to be included, nor that of bread.

There are several directions in which economy can be attained without any loss of efficiency whatsoever. We have developed during recent years an enormous consumption of fruits and vegetables, at all seasons of the year and from all quarters of the globe. When we were considering the war-time restriction of imports, of so-called less essential foods, we studied the distribution of the tropical and other forms of fruit. Nowhere in the world is there such a consumption of fresh fruits and vegetables during the twelve months as occurs in this country. Now it is very good and admirable, ideally considered, to have them all. It is certainly healthful. But in the volume that we employ them, when contrasted with milk, they cannot be defended. If our people have to choose between less milk and less fruits and vegetables, including hot-house, tropical, and imported fruits and vegetables of all kinds, there can be no argument. In the first place, milk furnishes far more calories per unit. There are fat-soluble vitamins in certain vegetables, it is true, but the milk has also balanced protein. The whole diet rotates about milk in the preparation of food, and it cannot be replaced. I have seen people trying to live on leaf vegetables, which contain the vitamins found in milk. They get their vitamins, but they don't get much else. Of plant products the seeds contain the least fat-soluble vitamin, and the most calories. Roots and tubers contain less calories and more vitamins. The leaf vegetables contain the least calories and the most fat-soluble vitamin. Milk contains everything but roughage. The leaf vegetables are to be highly prized, but vegetables as a class cannot be compared with milk. The reduction must come chiefly in hot-house and tropical fruits and vegetables, and in domestic products that are transported long distances. This does not mean a lowering of the standard of living, but a return to the simplicity of use that even the wealthy classes had only twenty years ago.

Secondly, the question of sugar. Pre-war sugar was a very cheap food. Sugar at twelve cents a pound retail is still cheap food, much cheaper than the meats. Even sugar at twenty cents a pound is cheaper than many meat products. But it is not the price of sugar with which we are concerned, it is the form in which it is consumed. It is not consumed as sugar, it is consumed largely as confections. We do not want less sugar consumed, we want it at a cheaper price. The sugar cost of a pound of candy is not over six to eight cents. The



price of a pound of candy varies from thirty cents to two dollars. We must not confuse sugar consumption with confection consumption. The difficulty with American consumption of sugar is not that it is too high, but that it is consumed in a mass of other materials, and we pay so much for labor, rent, overhead, wrappings, and profit, that the retail price paid by the individual is entirely out of proportion to the sugar value or food value of the commodity. What we suggest for the American home is not reduction of sugar at the table or in the kitchen. We need a reduction of sugar in more expensive manufactured states—confections and beverages. It is hygienic to consume sugar in the form of candy with the meals. It is just as good as consuming straight sugar. But while one costs now twelve cents a pound, the other costs many times that. If we could reduce the cost of the sugar that we consume, by changing the form so that we consume it as we buy it, or do our own fabricating, if you please, rather than buy so much in a highly fabricated form, it will result in a very large saving. If we are going to cheapen the American diet without reducing its quality, we must do so by increasing the consumption of bread and milk, and by decreasing the consumption of certain fruits and vegetables, meats, and meat products, and by holding the consumption of sugar, because it is a cheap food, to the amount we are accustomed to, but in the form of sugar rather than confections. Is it not possible to go back to the sugar consumption of twenty years ago, when we consumed more in the dining room, and less in the parlors, and on the street?

#### Diet Must Not Be Injured

These are the only ways in which the American diet can be cheapened and not be injured. We must not permit it to be injured. We are the best nourished people in the world, and we have acquired, as a whole, rather elevated ideas as to what constitutes a proper and normal diet. It is our duty to teach the American public how to spend materially less money, since we are going to have lower incomes. We must consume less and save more if we are to pay our debts. If we do not do this, we will at once provoke class contrasts; and class contrasts today are not only unfortunate and unjust, they are very dangerous. The chief basis for social unrest abroad is inadequate food and poor housing. Now the term "poor food" is partly relative, in some countries it means actually poor food, in other countries it means merely a reduction from the accustomed standards. This leads to discontent, as the people think lower standards of living are due to the government in power; that if they could change the government it would mean a lowering in the price of commodities and increase in diet. This is untrue, of course, but it constitutes the basis for social unrest. A reduction in the standard of living is inevitable; it must occur to some extent here and also in South America. It has come in Japan, as in England. It must come everywhere, for the simple reason that if the fiscal affairs of the world are properly run, the resources are not sufficient to maintain our inflated standard of living. If we are going to pay our debts, we cannot eat and drink and play as we are doing; if we are going to repair the ravages of war, we have to save, which means a reduction in the total plane of living so that the national net income may be augmented. We must produce more and consume less.

This becomes a practical problem for all Americans. The American people must be led scientifically and agreeably back to where they were, and the consciousness must

be preserved that this is a normal operation carried on for the public good. It must be visualized that we cannot maintain our present high plane of living while the other nations live on a much lower plane. That would mean isolation here, and bitterness everywhere else. It is fortunate for the American people that deflation has come before the contrast between us and the other nations had become more pronounced. We must use every effort to influence the trend of price deflation in the direction of normality of consumption. The readjustment that is inevitable should be done equitably, fairly, efficiently, from the standpoint of the purchasing power, justly from the standpoint of the social consciousness, in a manner to give satisfaction to all classes of our population.

#### AMERICAN DIETETIC ASSOCIATION TRANSACTS IMPORTANT BUSINESS

At the opening of the business meeting of the American Dietetic Association a letter from Dr. Frank Billings was read, which referred to the Association's becoming a member of the American Conference on Hospital Service. A motion was made and carried that the president make formal application for membership in this Conference. A report from the committee, appointed to consider the relation of the American Dietetic Association to the Hospital Library and Service Bureau, was read by Lucy Gillett. The committee recommended that, because there had been little time to investigate the matter, they would like to have an open discussion of the proposition, that all were agreed as to the need of a bureau for information and that this seemed to be a step in the right direction. The brief discussion which followed brought out the question of just how many members this bureau would serve, and whether or not it would help any except hospital workers. A motion was made and carried that the secretary make a thorough investigation of the proposition, and determine the wishes of all members before any definite action is taken. Katherine Fisher, chairman of the committee on nomenclature and function of sections, read the report of her committee. The most important recommendations were:

1. That the four sections now in existence remain as already organized, and that their function consist in developing the special interests of Association work.
2. That each section be responsible for: keeping in touch with newer developments in that field and for bringing these to the attention of the members of the Association; reviewing new literature; and appointing any sub-committees necessary for carrying on the work of the section.
3. That there be very close cooperation among the section chairmen so that each may be kept informed as to what work is being planned for the year, and so that unnecessary duplication of work may be avoided.

4. That each section chairman clearly understand her responsibility concerning the program at the annual meeting, and the time allotted to her section at that meeting.

The motion was made and carried that the report be accepted. E. M. Geraghty, chairman of the committee on standardization of training of dietitians, reported that because of illness on the part of a member of the committee from the American Home Economics Association, the report of this committee was not ready. The motion was made and carried to have this committee continued another year. A motion was made and carried to have secret ballot voting. Ruth Wheeler, chairman of the committee on revision of constitution and by-laws, asked that the points in question be discussed by correspondence and



no action be taken until next meeting. A motion was made and carried that this suggestion be adopted. Another motion was made and carried, that a committee be appointed to draft resolutions of thanks to all who have helped to make this meeting a success. Miss Rena Eckman was made chairman of this committee. Among others mentioned to receive copies of these resolutions were the following: New York Association of Dietitians; Department of Household and Institutional Administration; Teachers' College; Louis J. Frank, superintendent, Beth Israel Hospital; Mr. Vonderlon, Hotel McAlpin; Mr. Downing, Hotel McAlpin; Mr. Lifsey, Waldorf-Astoria; E. M. Statler, Hotel Pennsylvania; George Sweeney, Hotel Commodore; Miss M. Goldstein; Harold Martin, Associated Press; Underwood and Underwood; THE MODERN HOSPITAL; *Hospital Management*; Mr. Stanton, New York Central Lines; J. A. McNamara, Remington Typewriter Company; and Convention Reporting Company. E. M. Geraghty then presented a brief sketch of some of the things done by the secretary during the past year. Katherine Fisher moved that the Association express its appreciation of this work and suggested that the secretary should be paid a salary. Abby Marlatt seconded the motion. The amount of remuneration is to be determined by the wishes of all members, and this matter will be handled by correspondence. The motion was carried. Margaret Sawyer read the report of the treasurer, of which there was no discussion. Invitations were received from Chicago and Minneapolis for the next meeting. The time and place of meeting will be decided by the executive committee. The motion was made and carried that Miss Lulu Graves be made honorary president. This was greeted by hearty applause from the entire assembly. The Association presents the following resolutions:

The American Dietetic Association wishes to express to Miss Lulu Graves its appreciation of all that she has done for the Association during the three years that she has been president. She has been a strong executive, and during her leadership the membership of the Association has been extended to include men and women from scientific, administrative, and executive fields. She has been untiring in her efforts to strengthen the organization, and bring it to a feeling of permanency and solidarity. She has demanded high scholastic requirements of its members, but has also recognized practical experience as an educational factor.

The officers elected by secret ballot for the following year were: President, Mrs. Mary deGarmo Bryan, 626 Bergen Avenue, Jersey City, N. J.; first vice-president, Ruth Wheeler, Goucher College, Baltimore, Md.; second vice-president, Rena Eckman, University of Michigan, Ann Arbor; secretary, E. M. Geraghty, 801 South Wright Street, Champaign, Ill.; treasurer, Ellen Gladwin, Jefferson Hospital, Philadelphia, Pa.

### TRAINING BEGINS IN HOSPITALS

The rapid advance in treatment of men affected with psychoses is evinced by new methods adopted by the Federal Board in caring for ex-service men. In a vocational unit established by the Board at the Government Hospital for the Insane, St. Elizabeths, Washington, D. C., and at Manhattan State Hospital, New York City, vocational training is to be started while the patient is still in the hospital, will continue in a training center under expert supervision, and will prepare the man to return to his home not only with a trade but with a job.

The economic independence and consequent stimulation which hope of becoming once more a recognized and able member of society, will insure, and will in the judgment of the Board render certain his permanent adjust-

ment to the social conditions of his environment. Such a scheme, if successful, will make possible the establishment of similar units in all hospitals caring for a number of ex-service men suffering from nervous and mental disorders.

Nothing could be more in harmony with the general tendency of social adjustment along the line of psychological facts.

The former inept method of discharging a psychotic patient as cured when he no longer presented asocial or anti-social symptoms in hospital environment and of returning him to the very surroundings in which his psychosis had developed neglected the determining factors in his case. The relapse which frequently followed was to be expected. Economic dependence and no definite aim in life are enough to tear down normal mental resistance.

### FALSE STATEMENT CORRECTED

In the report of the third annual meeting of the American Dietetic Association, recently held in New York, an erroneous statement was made. The report stated that Dr. Alonzo Taylor advised that bread and milk in the dietary be reduced. This is incorrect. Dr. Taylor especially emphasized the importance of increasing the consumption of bread, and the use of sufficient quantities of milk in the diet.

### HYGIENIC SINNERS

The waitress who carries a napkin under her arm and wipes off your plate with it.

The fruit-stand owner who exhales on your apple and polishes it on his sleeve.

The cook who tastes from the pot and stirs with the tasting spoon.

The employer who does not supply adequate sanitary facilities for his help.

The street car conductor who holds the transfer slips in his mouth.

The restaurant toothpick and the cigar cutter.

The roller towel.

The milkman who takes the temperature of the milk with his finger.

The janitor or porter who dry-sweeps the floor.—*Medical Insurance and Health Conservation.*

### SOCIAL WORK A FINANCIAL SAVING

Mr. E. S. Elwood, secretary of the New York State Hospital Commission, recently said in a report of the results of social service work in New York state hospitals since the establishment of social service follow-up work, that the number of patients on parole from these hospitals has increased from less than 1,000 to about 2,300 last March. He says: "The coming of the hospital social worker and the establishment of mental clinics out in the communities have increased both the scope and efficiency of the parole system. . . . It is safe to say that at least a thousand patients in New York are enjoying a parole in their homes who would still be in the state hospitals were it not for the social service supervision given them. This means a financial saving to the state in maintenance alone of approximately \$1,000 a day. . . . The New York Legislature has just made provision for additional social workers, to the extent that each state hospital will have at least one worker for each hundred patients on parole. Massachusetts has a state director of social service, and a corps of nineteen social workers, which is the largest number employed in any state today."

## HOSPITAL EQUIPMENT AND OPERATION

With Special Reference to Laundry, Kitchen and Housekeeping Problems

Conducted by FRANK E. CHAPMAN, Superintendent  
Mt. Sinai Hospital, Cleveland, Ohio

### THE EFFICIENT LIGHTING OF THE HOSPITAL\*

BY A. L. POWELL AND H. H. ALLISON, HARRISON, N. J.

PERHAPS in no other class of buildings are the lighting requirements so varied, and yet so exacting, as in the hospital. Not only must we take into consideration the question of providing adequate illumination in a given room, but we must remember that we are dealing with the human element in a most trying condition. In collecting the information on which this article is based, the lighting equipment of one hundred of the leading hospitals in the vicinity of New York was studied critically.

The main entrance of the hospital, a lobby, or reception room, gives the patients and visitors their first impression of the institution. These are always important. If the lighting is soft and pleasing, those entering will be made to feel restful and at ease.

The lobby of the more pretentious building usually receives special decorative treatment at the hand of the architect, being finished in marble with suitably decorated walls and ceilings. The columns, stairways, and elevator entrances are in artistic harmony. An ornamental type of lighting fixture, in keeping with the decorative scheme is, therefore, essential to this part of the building. Here, if anywhere, money can be expended on massive fixtures to carry out the picture. At the same time, special precautions must be taken that the light sources are not glaring. This would preclude the restful atmosphere desired.

#### Securing Even Distribution of Light

If direct lighting is used, suitable means must be taken to screen the lamp filament from view by the use of diffusing media in the form of shades or globes. The indirect system, as pictured in Fig. 1, inherently takes care of this factor. A combination of one or more pendant ceiling fixtures with harmonious wall brackets will provide as even a distribution of illumination as is desirable. To facilitate entrance and egress an intensity of about two foot-candles is desirable. With well diffused direct lighting or indirect systems, this value can be obtained by providing approximately one-half watt per square foot of floor area. If surroundings are particularly dark, this value should be increased somewhat.

In the larger buildings the reception rooms adjoin the lobby and are fitted up more or less as residential living rooms, being provided with easy chairs and tables for the comfort of those waiting who wish to read and write. Two

practices in lighting apply to such rooms. The first provides a sufficient intensity, three or four foot-candles, through the entire room from suitably placed overhead units; the other, which is more comfortable and quieting, provides merely a low intensity of general illumination, and supplements this with a number of suitably placed and properly shielded local table or floor lamps. This arrangement gives a touch of light here and there which is artistic and restful, such an installation can be seen in Fig. 2.

#### Needs of Small Hospital

Small hospitals and dispensaries, of course, do not have an elaborate lobby or reception room, and often utilize part of a corridor for this purpose, having chairs, for the reception of visitors, along the walls. A moderate intensity of three to four foot-candles of well diffused light should be provided in this part of the building, with the standard type of equipment used for corridor lighting.

The present lighting, as pointed out below, of a high percentage of the institutions, leaves much to be desired. Of the one hundred hospitals inspected, only five have their lobbies and reception rooms lighted in a manner which would be deemed satisfactory to the experienced lighting engineer. Fourteen per cent were illuminated by glaring incandescent lamps without any means of shielding the light. Fifteen per cent had, as their only lighting, a single gas jet.



Fig. 1. Night view of a typical well designed hospital lobby illuminated by the indirect method supplemented by wall brackets and local lighting near the elevator. A harmonious and pleasing room is thus provided.

\*Published by courtesy of the Edison Lamp Works of the General Electric Co., Harrison, N. J.



The hospital corridors or passage ways are usually provided with hard surfaced walls, ceilings of light color, and white tile floors which can be readily cleaned, and to be in keeping with the modern sanitary conditions, the lighting fixtures should be of a simple construction, easily cleaned, and non-dust collecting. They should be so arranged that direct rays will not strike the eyes of the patients and cause annoyance.



Fig. 2. The reception room in a large hospital as it appears by night with totally indirect units for general illumination, supplemented by decorative wall brackets, table and floor lamps. The comfortable, home-like appearance to be desired is thus obtained.

The totally indirect method is very desirable for lighting corridors of buildings where the highest standards prevail, the lighting is comfortable and artistic, as indicated in Fig. 3.

The system of direct lighting, employing a compact ceiling fixture with a suitable diffusing reflector also furnishes good illumination and is widely used for corridor lighting. There are many types of sanitary fixtures designed exclusively for hospital use, being dust-proof, with enamel finish.

As only sufficient light need be furnished to permit easy passage, an intensity of one foot-candle is adequate. For direct lighting an allowance of one-quarter watt per square foot floor area will give the required illumination, providing surroundings are light in color. This value should be increased slightly if surroundings are dark. As an example: A corridor eight feet wide might well be furnished with twenty-five-watt lamps in direct lighting reflectors, or globes on twelve-foot centers.

The investigation of hospital buildings above referred to, indicated that the same condition of inadequate illumination exists in the corridors as in the lobbies. Only 20 per cent are lighted to the desired intensity. Half of those which were inadequately lighted had sufficient wattage, but poor application resulted from use of inappropriate fixtures. The remainder were not provided with sufficient outlets, and used glaring light sources.

### Wards

The ward is essentially a sick room for accommodating a number of patients at the same time. The size is determined largely by the purpose for which the hospital is used. In private hospitals, most of the patients occupy private or semi-private rooms, and the wards are designed

to accommodate only a few patients. Public institutions, however, as a rule, are composed entirely of large wards accommodating upward of forty patients.

Wards, therefore, vary in size and shape, but generally are provided with hard surfaced walls and ceiling of light color and floors of glazed surface which may be readily cleaned. Typical wards of square and rectangular shapes with the usual arrangements of beds are shown in Fig. 4. Owing to the fact that patients' eyes are directed toward the ceiling for hours at a time, the lighting must be of a nature that will not strain or tire the eye.

In the ward there are three distinct requirements for lighting: first, in the evening hours, visitors are received who desire to move about or sit and talk with the patients; at this time, also, nurses and doctors perform their routine duties in preparation for the night. A well diffused system of general illumination is necessary to provide lighting that will be sufficient for the ordinary purposes as described above.

Second, local lights over the beds, in addition to the general system, are necessary. These should be of a character which will permit the patients to read or pass the time at other occupations requiring close vision, without eye strain. It also is frequently necessary for the doctors or nurses to attend a patient at night, and they need a high intensity of illumination for the use of instruments, etc.

Third, all hospitals require the lights in wards to be extinguished after a certain hour, but a night light is necessary to enable the nurse or other to move about with ease, and

exercise the necessary supervision.

Analyzing these requirements we find that the totally indirect system (see Fig. 5) is probably most suitable for the general illumination, although semi-indirect units



Fig. 3. A corridor illuminated by the totally indirect system. Fixtures are placed approximately twenty-one feet apart and one-half watt per square foot of floor area is provided. The glass cover above the reflector should be noted, making it a very simple matter to clean and maintain fixtures in a sanitary condition.



may be used if equipped with heavy density bowls. The direct method using totally opalescent globes (Fig. 6) may be utilized in small wards or in remodeled buildings where conditions are not favorable for indirect lighting.

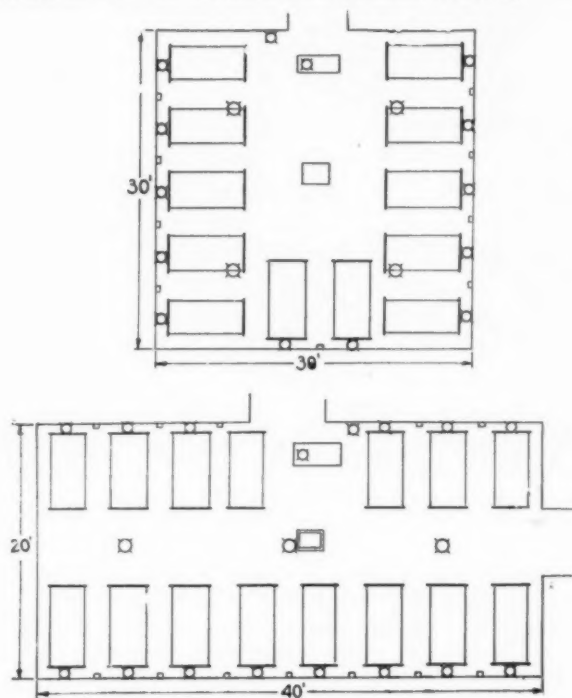


Fig. 4. Sketch showing typical arrangement of outlets in wards of the square and rectangular type. Ceiling outlets for general illumination and baseboard receptacles for local lighting, together with a drop lamp over the nurse's or attendant's desk will be noted.

Two or more rows of ceiling outlets are necessary to provide even distribution of general illumination in wards which are square in shape, but the long, narrow type require only a single row of fixtures as shown in the diagram, Fig. 4.

The proper intensity of general illumination for wards has been the subject of considerable discussion. The consensus of opinion, however, is that an intensity of two foot-candles on the bed level is altogether desirable.

If the indirect system is used with light surroundings, the above intensity will be obtained by an allowance of one-half watt per square foot of floor area. If surroundings are dark this should be increased slightly.

Outlets with a bracket type fixture for local lighting should be provided over or between the beds to furnish sufficient illumination for special purposes, as explained above.

There are several types of wall bracket fixtures available for this purpose. One fixture which reduces wiring costs and is very desirable combines the light and an extra receptacle in the same base. This base of flat white glass is attached to the wall; an opalescent reflector conceals the source and directs the light on the bed. Below the lamp is located a flush receptacle to which portable lamps, heating appliances, or instruments may be attached.

The importance of providing an extra receptacle cannot be over-emphasized. It is obviously undesirable to remove the lamp from the lighting fixture every time current is desired for these purposes, and unless equipment such as that just described is provided, baseboard

outlets at frequent intervals are also very essential.

A common method of providing the night lighting is by use of low wattage lamps, wired on a separate circuit in the fixtures for general illumination, which are kept burning when all other lights are out. A very modern method for night lighting of wards is the placing of lights in the floor within trough reflectors, covered by clear plate glass. Their light is, of course, sent to the ceiling and diffused downward. This arrangement gives a light of low intensity and precludes all possibility of annoyingly bright fixtures.

A somewhat more elaborate night lighting system uses individual floor lights such as found in modern Pullman sleeping cars. Small pockets lined with reflecting material are recessed in the baseboard. The light from low wattage lamps shining through a set of baffles or louvers is cast in a narrow streak onto the floor between the beds, not visible to the patient, yet making all objects readily discernible.

As a night light is intended to furnish just enough light to discern the large objects, such as beds and doors, an intensity of one-quarter foot-candle is sufficient. An allowance of one-tenth watt per square foot floor area will give this. Thus in the sketch, Fig. 4, of the square ward, the dimensions thirty by thirty give a total area of nine hundred square feet, an allowance of one-tenth watt per square foot would indicate that a total of ninety watts was required for night lighting. A twenty-five-watt lamp in each of the four indirect lighting units shown is the solution.

The location of the nurse's desk is generally at some convenient place near the entrance, and an outlet should be provided for a portable desk light to be used by the night nurse in making up the records, etc. A wall bracket or other suitable light should also be provided over the chart rack to permit its examination at night, (see Fig. 7).

The medicine cabinet should be provided with suitable light during the night so that the nurse may select the proper container without groping or making mistakes. The medicine cabinet is sometimes placed under a fixture and a drop light with rather dense translucent reflector is suspended over its glass top.

Interesting figures are obtained from the inspection of

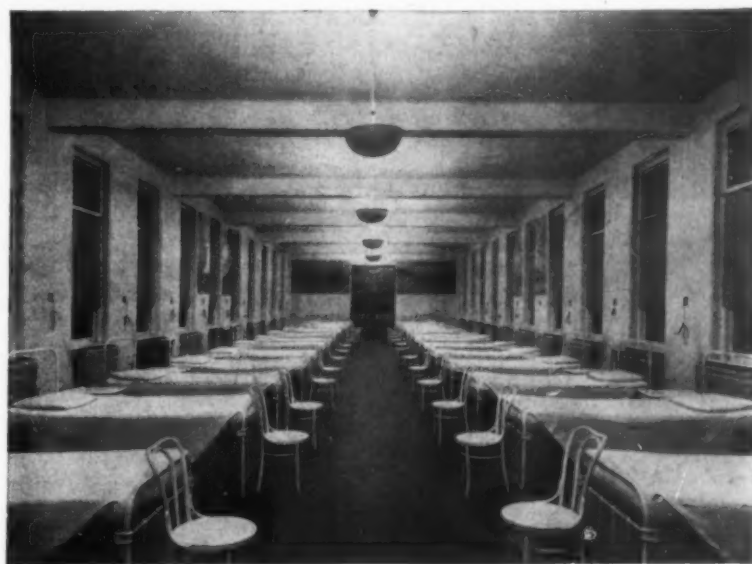


Fig. 5. The soft, comfortable lighting produced by the indirect system is shown in this view of a ward of oblong shape using a single row of outlets. The cords for the signal system will be noted between the beds at each side of the room.

lighting conditions in the wards. Those which are equipped with both general and local illumination comprise only 42 per cent of the total, 43 per cent depend solely on general lighting, and 15 per cent on local lamps alone. The indirect methods were used in 10 per cent of the wards which possessed general systems. Bare lamps on fixtures and drop cords composed 14 per cent and gas light 2 per cent. Properly lighted wards comprised only 4 per cent of all those visited and over 90 per cent did not exceed one foot-candle intensity.

The small utility rooms for washing apparatus, sterilizing, preparing food trays and the like located adjacent to ward or in other parts of the building, as well as the dressing and nurses' rooms, should be lighted by a suitable ceiling fixture and have local units over sinks, sterilizing apparatus, or desks as the case might be. Baseboard receptacles should be provided in all of these for use with portable devices. A suitable arrangement is seen in Fig. 8.

The private room in the hospital resembles a bedroom which has been especially equipped for the care of the sick. In many instances it is highly decorated, with luxurious surroundings, similar to one in a private residence.

A well diffused general illumination and local illumination similar to that previously described may be used. The intensity need not be as high as in the ward, owing to the fact that it is used by fewer persons. The fixtures employed in lighting may be somewhat elaborate and decorative to suit any particular interior. The indirect systems are preferable for general illumination where conditions are favorable. A pleasing example of semi-indirect lighting is to be seen in Fig. 9.

The direct system may also be used for this purpose, where indirect methods are not practical, care being taken to provide suitable diffusing media. A central ceiling fixture should be supplemented by wall brackets or table lamps near the bed. These should be fitted with reflectors



Fig. 6. Enclosing glassware which diffuses the light and which can be readily cleaned is used in this square-shaped ward for general illumination. Such lighting is simple of installation, inexpensive and a remarkable improvement over much of the equipment now in use.



Fig. 7. A semi-private ward lighted by a single porcelain enameled totally indirect unit. The nurse's desk with a local light located near the main control panel will be noted. Baseboard receptacles and emergency lights are properly placed.

or decorative shades which will diffuse and direct the light where needed.

If the combination wall bracket fixture and receptacle described before are not used, a separate receptacle for heaters or instruments is necessary. Additional lights over dressers or mirrors may be provided if conditions permit. The general illumination should be controlled by a wall switch near the entrance doorway, while the local or bed lamp must have a switch within convenient reach of the patient.

Only about 10 per cent of the hospitals visited are properly lighted in the private rooms. The rest employ single fixtures with ineffective reflectors or bare lamps.

### Operating Rooms

The lighting requirements discussed thus far do not differ materially from those ordinarily encountered. In lighting. There are general types of operating rooms which require slightly different treatment in their lighting. The first is the type of room used in the city or private hospital, which is relatively small in size and contains merely the operating table, sterilizer, and a few necessary pieces of apparatus. The second is the operating room of the hospital connected with some educational institution and is made in the form of an auditorium for the purpose of holding lectures or clinics accompanied by demonstrations. Walls and ceiling are, or should be, pure white and in the more modern hospitals, the walls are constructed of tiling and the floor of smooth white marble for ease of cleaning and sanitation.

In the first type of room, strong illumination is needed over the operating table, with local lighting for the sterilizer and accessory appliances. There will, in general, be sufficient light reflected from these units to enable the surgeon and attendants to move about with facility.

In the auditorium type of operating room, the "pit" may be treated as just discussed, but general illumination must also be provided in the balcony to enable the class to take notes with ease. An intensity of three

or more foot-candles is desirable here and may be provided by the use of wall brackets at the rear of the top tier of seats, supplemented by properly spaced ceiling units of standard types. Wall bracket or overhead units should also be provided for general illumination of the "pit," to be used when preparing for an operation, and at other times when general illumination used is necessary here.

The lighting equipment used in the operating room must have the general sanitary and ease of cleaning qualities necessary throughout the hospital.

The main question is that of lighting the operating table proper, and the requirements for both types of room are identical in this respect. In the auditorium type of operating room it is common practice to conduct operations at night, making the demands for this class of buildings especially important. In the smaller institutions, the majority of the operations are performed in the daytime and it is only on special occasions or emergencies that artificial light is called into play.

The operating table requires a very high intensity of well diffused light of the proper color coming from several directions. High intensity is required on account of the minute details which must be observed at all times. Diffusion is necessary to eliminate shadow effects. Light of approximate daylight color is desirable in order that the blue veins, red arteries or yellow bile ducts can be distinguished one from the other. It is also essential to have light coming from several directions in order to illuminate the interior of the incision properly. Many classes of work require light from nearly a horizontal direction for penetration.

The fixture itself must be of such construction that there is no danger of dirt accumulating and falling into the wound, and must be so placed as to minimize the possibility of this action. It should radiate the minimum amount of heat in order that the surgeon and attendant may work in comfort and without danger of perspiring.

The natural illumination of the operating room should



Fig. 9. A pleasing arrangement for a private room. A centrally located semi-indirect fixture provides general illumination and the decorative effect is enhanced by the table lamp and bracket unit with suitably toned diffusing shades.

be a subject of careful study, and to secure the best results the surgery is usually located on the north side of the top floor of the institution, where minimum obstructions exist. Skylights with semi-diffusing glass constitute a part of the north wall and a considerable part of the ceiling. North light is generally well diffused and more uniform in quality and quantity than that from other points of the compass, and for this reason is preferred.

The surgeon endeavors to conduct the most important operations under daylight conditions, yet he realizes that in times of emergency dependence must be had on artificial illumination. Without giving the matter careful thought, many medical men would make the claim that it is impossible to secure thoroughly satisfactory artificial lighting. This statement may be justly combated, for with discretion in the choice of equipment and with the application of sufficient electrical energy transformed into light, daylight effects can be readily simulated. The uninitiated might think that such a procedure was too costly to be practical. Such is not the case. Suppose, for example, it required a total of three thousand to five thousand watts to illuminate an operating room properly. (This is far more than necessary in most cases.) At the customary rates for electrical energy, this might cost from twenty-five to fifty cents an hour. The operating room is customarily charged for and it will be seen that this figure represents but 1 to 2 per cent of the rental of the room. Certainly proper lighting is worth this percentage.

The old methods of operating table lighting were indeed crude. One of the most common forms of fixtures consisted of a cluster of relatively small incandescent lamps arranged radially under a flat reflector. This fixture was glaring and the light came from one general direction, making shadows dense. Sometimes these fixtures were equipped with diffusing glass screens, but at best this did not produce good results. In an attempt to eliminate many of the objections of this arrangement, an elaborate scheme was developed in Germany where



Fig. 8. Night view of a utility room showing the local lighting from bracket units over the sink and sterilizing apparatus. Sufficient light is transmitted through the opalescent reflectors to provide general illumination.



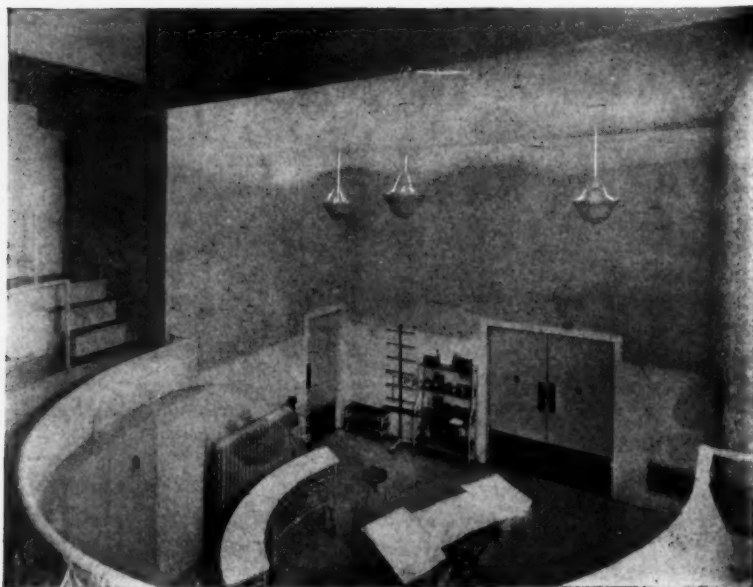


Fig. 10. Night view of an operating room of the auditorium type lighted by the indirect method. Large lamps are employed in the mirrored glass units. The distribution of light is uniform, glare is eliminated and shadow effects minimized.

a cluster of mirrors was grouped around a support, a searchlight placed outside of the room and a beam of light thrown through a lens system to the disc of mirrors and finally directed on the table. This scheme was used to some extent in Europe, but has not met with great favor in this country, as the mirrors require frequent cleaning, and in cleaning get out of adjustment. Much simpler methods of obtaining the same results have since been developed, as indicated later.

With the constantly increasing efficiency of the incandescent lamp, methods of application, which a few years ago would have been impractical on account of the high operating cost, are now most feasible. For example, north skylight can be imitated by placing daylight Mazda lamps in suitable reflectors outside of, and above the skylight, illuminating the room with light of the same character, of the same general direction and with sufficient intensity. This method is actually used in some of the more modern buildings. It is true that there is a certain amount of absorption in transmission through the glass and that the construction work is rather costly, but the splendid results obtained justify such expenditures. For general illumination of this character an intensity of thirty to fifty foot-candles is desirable and would be attained by providing from ten to fifteen watts per square foot of floor area, depending on the structural arrangement, density of the glass of the skylight, type of reflector, size of lamp used and similar details.

If such a scheme as this is not feasible, a number of other methods, as indicated in the illustrations, represent good practice. Totally indirect illumination, as pictured in Fig. 10, may be used if the ceiling is light in color and of a character suitable for reflecting the light. Mirrored glass units equipped with daylight lamps are efficient and produce evenly distributed, very well diffused (practically shadowless) illumination. Instances have been reported where indirect lighting has proven unsatisfactory for this purpose, but analysis

generally reveals that inefficient wattage was used and hence an inadequate intensity of illumination secured. It must be borne in mind that work of the character carried on in the surgery demands a high degree of illumination, and to secure this, sufficient power must be used.

Where conditions preclude the application of the skylight method of general illumination by the indirect systems, special direct lighting fixtures are available. One of these is shown in Fig. 11. This consists of a pyramidal shaped metallic hood suspended over the table, fitted with mirrored glass reflectors and Mazda C lamps. The special equipment pictured is provided with an outer and inner glass cover with a space between these and a ventilating arrangement for conducting the heat away from the table. Such a device provides diffused light of a high intensity from directly above the table. The large area of the source tends to eliminate shadows. Its advantages are its simplicity and compactness. A unit of this character is entirely adequate for the less exacting operations and maternity work. It is often necessary to supplement a unit of

this type with a portable lamp stand and suitable reflector to direct light on vertical surfaces.

In the attempt to obtain light from a number of directions, as in the searchlight and mirror arrangement previously mentioned, the fixture shown in Fig. 12 has been developed. This is made of nickel plated pipe, shaped like a large wheel eight feet in diameter. Eight polished steel parabolic concentrating reflectors utilizing small lamps are equally spaced about the rim. The reflectors focus the light on a rather small spot, producing a high intensity, and since a multi-directional effect is secured, some of the desired objects are attained. The diffusion is not all that is to be desired, and if the surgeon chances to glance upward, there is a possibility of objectionable glare. Inasmuch as only a small area is illuminated to a high intensity, it is necessary to supplement a unit of this character with good general illumination in order



Fig. 11. A diffusing type of operating table fixture equipped with six 100-watt Mazda C lamps in mirrored reflectors. A diffusing glass plate covers the lower side of the unit, which is so constructed as to provide for dissipating the generated heat.

that the nurses and assistants may have light to select instruments, bandages, thread needles, use sterilizers, and perform their natural functions.

A modification of this scheme of lighting which has its good features and overcomes most of its objections is shown in Figs. 13 and 14. In this arrangement twelve prismatic angle type reflectors are mounted on a framework or directly attached to the ceiling about ten feet above the floor. These are fitted with seventy-five-watt bowl enameled daylight lamps. A splendid distribution of light on the table from all directions is secured. The light is of a suitable quality, units are hung at a sufficient height so that the heat is not objectionable, the fixture construction is simple and reflectors are not located directly above the table, and any dust which might have accumulated will not fall in the wound. Since the prismatic reflectors transmit a certain percentage of light, no general illumination is needed in addition. Measurements of the illumination produced by such a layout indicate the following intensities: between forty and fifty foot-candles on the horizon plane, from twenty to thirty foot-candles on the 45 degree plane and from ten to twenty foot-candles on vertical surfaces above the table.

The investigation referred to previously, indicates that there is much to be desired in present practice. At least 90 per cent of the operating rooms inspected were equipped with a single fixture over the operating table, with an inadequate reflector of a glaring type which gave an undesirable distribution of light for this sort of work. Eight per cent of the hospitals were equipped with either of the units shown in Figs. 11 and 12, and only 7 per cent of the total were properly provided with a sufficient number of receptacles for the attachment of local lights, instruments, anesthetic apparatus, and other very essential appliances.

### Laboratories

The nature of the hospital laboratory depends considerably upon the branch of medical practice to which the institution is devoted. Those confined to certain classes, as maternity or nose and throat work, have practically no demands for this part of the institution, while others, especially those used for skin and orthopedic diseases,

use laboratories of considerable extent. Analytical work and bacteria culture experimentation is carried on, and the general lighting requirements are quite identical with

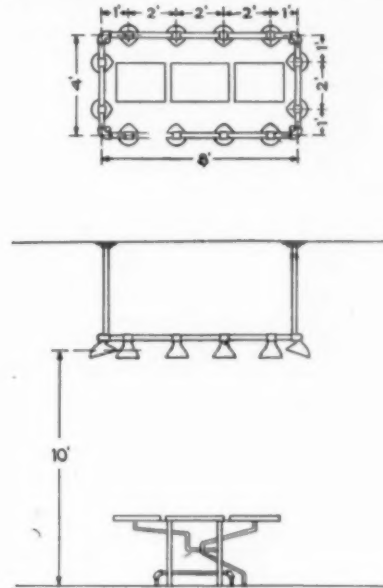


Fig. 13. Arrangement of angle type prismatic reflectors with 75-watt bowl enameled daylight lamps for illuminating the operating table.

those of the chemical laboratory. Evaporation, filtration, titration and like processes naturally demand a reasonably high intensity (five to eight foot-candles) of general illumination in order that these steps may be carefully matched.

Local lighting of the benches around the walls where the major portion of the work is carried on should be supplemented by general illumination for the center of the room where the ovens, refrigerating and sterilizing apparatus are located. As there is a possibility of a considerable amount of chemical fumes being present in the atmosphere, special attention must be paid to the choice of fixtures and equipment. Any metal work must be treated to prevent deterioration. Porcelain, rather than brass shell, sockets are to be preferred. If metal reflectors are used, they should be porcelain enameled rather than of the less permanent finishes.

One of the particular problems encountered here is the artificial illumination of the microscopic field. There are a number of special devices for this purpose. Slides of a light character can be examined readily with well diffused light of a moderate intensity. The opal bulb fifty-watt lamp gives such a character of light and has been used to some extent for this purpose.

Much of the work, however, is on slides containing dark blood fields and the like. This requires a powerful source of illumination. Until within the last few years, the arc light has been used almost exclusively for this purpose. At best, this form of illuminant is annoying on account of its flicker, and the necessity for constant adjustment of the carbons. Recent developments of lamps with concentrated filaments have eliminated these difficulties. Such an illuminant gives a steady light of uniform quality. The small size of the light emitting portion enables one to place it

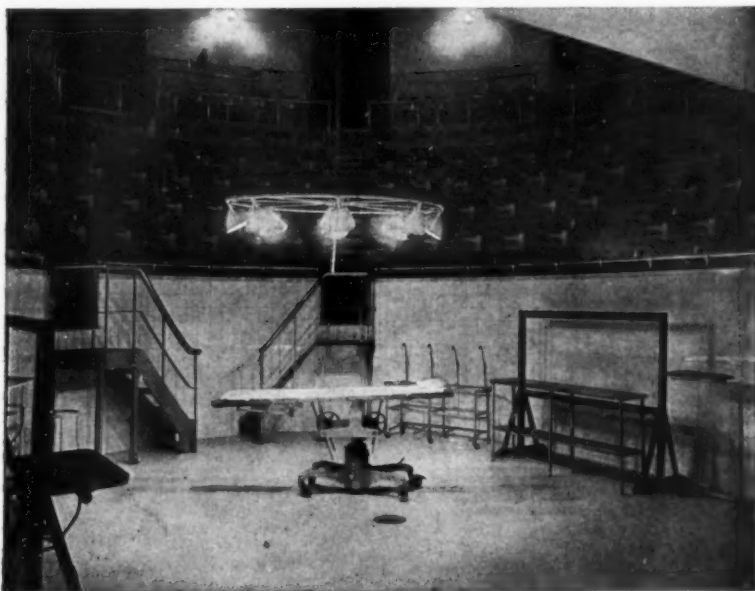


Fig. 12. The operating amphitheater of a large municipal hospital provided with the special fixture described in the text. The concentrating reflectors with 60-watt Mazda lamps direct the light at the working point.



accurately at the focus of a lens system, and obtain any concentration necessary. Frequently, low-voltage lamps, which have somewhat more concentrated filaments than those designed for operation on the standard circuits, are used for this work. By applying correctly selected dense blue glass screens the color of the transmitted light can be readily modified to an exact north sky quality.

### X-Ray Room

The properties of the Roentgen rays or the apparatus used in their production are outside of the province of this publication. On the other hand, suitable artificial illumination must be provided for illuminating the rooms in which the x-ray machines are located. The old practice of using a few wall brackets or drop lights located rather indiscriminately about the room is not a condition to be desired. Low hung fixtures are objectionable, being in the way of wiring and control apparatus. Suitable diffusing direct lighting fixtures placed close to the ceiling to give even illumination of three to five foot-candles are preferable. Baseboard receptacles should be provided at convenient intervals around the room for portable lamps or auxiliary appliances which may be necessary.

General lighting is also desirable in the fluoroscopic room, and the fixture should be so wired that the lights are operated by a switch on the foot pedal which controls the x-ray apparatus. The small dimmer light should also be operated from this foot pedal. Some such arrangement as this is most essential in order that the person using the table may switch off, dim, or turn on the lights without moving from the x-ray control. If he must first turn off the x-ray apparatus and then stumble about in the dark hunting for a wall switch or socket, confusion and breakage of valuable apparatus may result.

After the x-ray negative is obtained, it is necessary to examine it very carefully to determine the nature of the ailment or the extent of the fracture. Considerable experimentation has been carried on to ascertain the best method of providing light for this purpose. Extremely well diffused illumination of approximately daylight character has given the best results. It is a simple matter to construct a box or frame work, the mouth of which is covered with diffusing glass. Daylight lamps in efficient reflectors are located behind the frame work and their light directed on a flat white background. From here it is diffusely reflected to the opalescent glass plate and thence through the negative.

### Wiring and Signal Systems

The source of current supply in any public building must be dependable. This condition is particularly true in the hospital where the occupants are in a critical physical condition. The most exacting demands exist in the operating room, where the failure of illumination might have a fatal result.

Some of the larger hospitals have their own generating plant and the possibility of this being out of service should be anticipated and breakdown service, from the central station, installed. Many isolated plants are designed for a 220-volt system, which is not desirable from the standpoint of lighting service. As to the choice of system, it must be borne in mind that alternating current is necessary for the x-ray apparatus and in case of a direct current installation, a motor-generator set must be provided for this purpose.

Whether the hospital has its own plant or whether the current is supplied by a central station, the building should be so wired that the blowing of a fuse will not extinguish all of the lights in any section of the building. The circuits in the wards and corridors, for example, should be so arranged that part of the lights are on one circuit and part on another. In some instances, duplicate panel boards with emergency switching and plugging arrangements are installed to make possible a quick change over.

An emergency system in the operating room is particularly important, so that even the failure of the entire electric supply will not throw the room into darkness. Gas as an auxiliary is at best a makeshift, for it is not likely that suitable equipment will be installed to give satisfactory illumination with gas. As ether is used as an anesthetic, it is not particularly safe to have an open flame near the spot where this is being administered. A small storage battery of sufficient capacity to light the operating room for a given period of time is a most desirable feature. The mere throw of a switch in such an installation takes care of any emergency. The care required by a storage battery is not excessive, and most hospitals have a plant engineer who is thoroughly competent to maintain the battery. Smaller lower voltage batteries are also very useful for furnishing current for miniature surgical lamps and microscope illumination.

The signal system in the hospital, an important element, also employs the storage battery for its operation. The modern type of signal devices are noiseless and the old bell or buzzer for calling the nurse or attendant is a thing of the past. Two general methods are employed for the purpose, one utilizes a semaphore or small arm which drops from a vertical to horizontal position over the door or nurse's desk. The latest system has a push button by the patient's bed which, when operated, lights a signal lamp over the nurse's desk and one by the bed, or outside of the door in the case of a private room. When the signal lights, the nurse glances down the ward or corridor and locates the patient who requires attention. These lights are left burning until the nurse responds, who extinguishes them by inserting a special key in the push button switch.

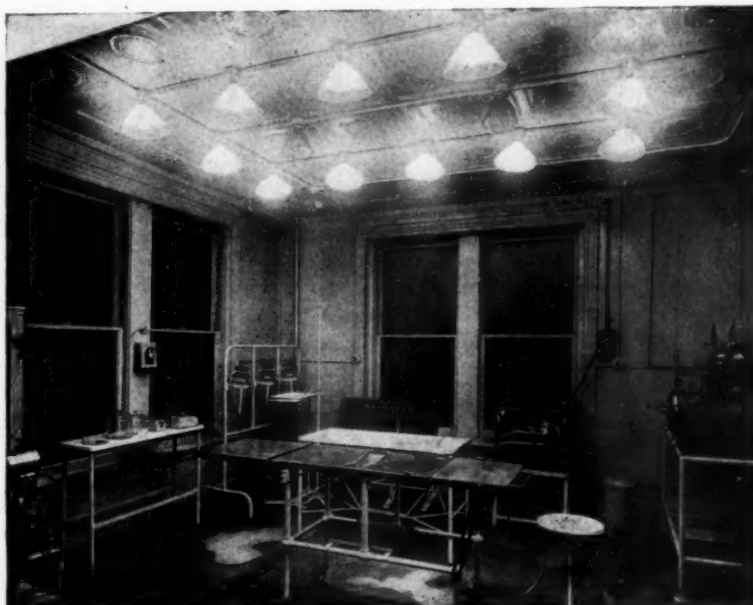


Fig. 14. Night view of the operating room of an industrial clinic. Notice the excellent distribution and quality of light.



## THE MARKET'S TREND\*

BY C. B. EVANS, THE ECONOMIST, CHICAGO, ILL.

TO PERSONS who sell service and buy commodities, the question of market price is of far more importance than to those who are exchanging commodity for commodity. The present time offers an unusual opportunity for the exercise of judgment as to prices and the probabilities for the future. The weight of evidence is against the wisdom of buying now, at least anything that has not been marked down sharply. On the average, wholesale prices of 100 commodities in the United States have declined 34½ per cent from the top scored during the war boom, but recent purchases at the reduced figures have left merchants with a loss when they came to selling their merchandise. This has been distinctively true with respect to fabrics, copper, leather, and rubber, the latter commodity going from a price of fifty cents at the opening of the year in our markets, to eighteen cents, the lowest figure in the history of the trade. In this country there has been little or no upward reaction in price after a decline has been recorded, but curiously, in England there was an upturn in the average December 1, as reported by the Board of Trade, which immediately led to an advance in the wages of employees in the Bradford weaving mills.

Some of the phenomena of trade have led to the opinion on the part of leading students or fairly well qualified judges, that we shall have a revival of trade in the spring, which would lead to higher quotations. The basis for that guess is a large reduction in the supplies of goods due to suspension by the mills. It will then be a question of the buying capacity of the public, which has been much curtailed by shrinkage in the values of farm products. Whatever may be the outcome of these predictions, it seems certain that further declines must be limited by labor value, and for the present the reductions in wages are extremely small. The man who works with his hands must come down nearer to the salaries paid to professional men, before anything that can be distinctly called liquidation in labor shall occur.

The clearest thing in the situation is the unwisdom of engaging in any line of building construction. This is especially true at the great centers, such as Chicago and New York, where not only are the workers receiving extraordinary wages, when they work at all, but there is a combination, including union men, contractors and material men, whose sole purpose appears to be to keep costs up to their present levels. Thus, in Chicago, buildings are constructed only to meet the most imperative needs or to secure extraordinary rentals. As a consequence of such conditions, permits for the construction of buildings in 156 cities of the United States in October called for less than \$93,000,000 against \$146,000,000 in the corresponding month of 1919. This is in spite of an insistent demand for more accommodations.

A partial remedy for this situation may be found in immigration, which threatens to be on even a larger scale than the most zealous champion of low wages could desire. Europe is largely tired of Europe—and no wonder—and is coming over by the millions. Much of this labor will be inefficient, but it will have its effect on the average. There should be a good supply in this country of all means

for combating disease and pauperism, for human wrecks are said to be coming this way in large numbers. Even this country is not to be immune from the traditional after-effects of war. Legislation now pending is designed to prevent such evils, but more particularly to meet the wage demands of the trade unions.

Some of the authorities, closest to the handling of leading articles of merchandise, have reached the conviction that raw materials are now at bottom prices. This is not surprising in view of the slump in grain, cotton, live stock, wool, hides and leather, rubber and copper, some of which items are below the average of pre-war times. There is a possible chance for error in drawing inferences from these figures, for in the case of all these commodities there is labor, intermediate between the primary article and that which reaches the hand of the consumer. In the case of fabrics, however, the finished article has gone even beyond the raw material in its decline. These goods are now sold, not on a schedule, but for what they will bring. Raw silk, partly because of the breakdown in Japan, and partly because of the excessive supply that was long hoarded in the warehouses of the United States, has gone to a third of its war price and shows little tendency to react.

The one article which stands as a stay against declining prices is steel. True, that commodity has reacted from its highest prices but this is through sales by the independent companies, that is, companies other than the United States Steel Corporation, which for a year and a half have maintained prices of their own, and are now obliged to let down toward the schedule of the Steel Corporation. Present indications are that the schedule of that concern will not be changed in the near future, even though the demand for its products shall fall off. So clear is it to the International Harvester Company that its materials, of which steel is the most important, will not decline much that it has issued to its customers a statement of regret that it cannot place any lower figures on its manufactures. It is natural to conclude that furniture, implements and instruments made of steel will decline little.

It is not quite true that this country can buy from the rest of the world anything it wants at its own price, but poverty, disorganization and unfavorable exchange rates have placed all nations, from China to Great Britain, in a position where they are anxious to sell. This is of special interest to us with respect to Germany and the other central European countries.

Some of the most needed articles for individual, home or hospital are produced in their highest perfection by European countries and these countries are back in the world to get trade. They will sell to buyers thousands of miles away at lower figures than are quoted in their own countries. The chemical and dye interests of the United States have grown somewhat during the war period, but there are surely many articles in which Europe is our superior, at least with price taken into account. Some of the goods are here and more are on the way. In the first nine months of this year one European nation sent to the United States 1,574 tons of dyestuffs and intermediates, valued at \$6,000,000.

Among American products of interest to the medical profession one may note that quicksilver, formerly a familiar figure in the market at one hundred dollars per

\*With this article, THE MODERN HOSPITAL inaugurates an authoritative market service that will be a regular monthly feature. Obviously it is impossible to present more than a limited digest of conditions affecting the commodity market in this country. Distinct reference, however, will be made in succeeding articles to the commodities in which the hospital field is interested—Editor.

flask, has lately been quoted down to fifty dollars. We probably shall have to depend more in the future on the Spanish and Italian mines than heretofore, as a number of the American mines are in process of abandonment. In view of the attitude of European producers of various articles, however, this need not have much effect on the price.

Prominent among American products are those which come out of the carboniferous strata far down in the earth. Coal tar products have been rather weak lately, in sympathy with the declining prices in other things, but here again Europe with its cheap labor and its anxiety to get back into the world is likely to give us cut prices. As to petroleum and its derivatives, little is to be expected if we are to measure conditions by the prices and demand for crude oil and gasoline. There has yet been no decline in petroleum at the mouth of the well except in comparatively small areas in the Louisiana district. Texas oil sells at three dollars per barrel just as it comes out of the well, and one of the best authorities gives it as his opinion that there will be no decline in petroleum except a small one in gasoline during the cold months.

In running down through the latest quotations in the general list of chemicals and drugs, one sees dullness and weak prices all the way along. The large buyer is likely at any time to have a great quantity of a given article thrown at him at a figure which will surprise him by its lowness. There is an excellent chance here for good judgment as to how long this will last, for scarce is a temporary condition, and low figures lead to curtailment of production.

The relation of the money market to these things is not specially close at this time. As a general principle, the more money, that is, the more units of gold or paper, the higher the price, and our money supply is now at about the highest point in a long period of inflation, but statistical facts in the commodity markets are ruling now, plus a mood on the part of the holder which makes him an easy victim to the manipulator for a low price. On any rather sharp decline in a commodity it is probably wise to buy now, for the market is not a smooth inclined plane on which prices slide to the bottom, but rather a stairway with many landings.

The following is a table of prices made up by the New York Federal Reserve agent. To avoid any misunderstanding it is necessary to say that the changes mean declines in the aggregate value of a large number of commercial articles, whereas the change noted in the first part of this article related to index numbers such for example as a decline from twenty to fifteen, which would be 25 per cent.

#### WHOLESALE PRICE INDICES

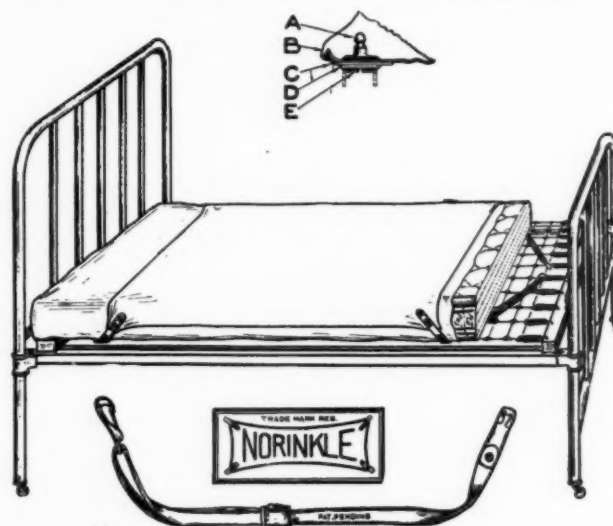
Country.	Per cent decline during latest month reported.	Per cent decline from highest.
United States—		
Bureau of labor.....	7.0	17.3
This bank's index (12 basic commodities).....	5.2	33.5
Dun's.....	4.3	13.7
Bradstreet's.....	7.3	24.9
British—		
Economist.....	6.2	14.1
Statist.....	3.4	9.9
French.....	4.4	13.9
Italian.....	.8*	2.1
Japanese.....	2.1	28.3
Canadian.....	2.9	11.0
Swedish.....	4.4	6.2
Australian.....	2.5	2.5
Calcutta.....	1.0	5.5

\*Increase.

The wide variations in the percentages of decline from the top are due to the differences in the classes of commodities, and the number selected by the statisticians and the wide range of localities. Prices have declined since these figures were made, but tabulations have not been completed.

### STRAPS FOR RUBBER SHEETS

One of the greatest sources of discomfort in a hospital is the necessity for using rubber sheets on hospital beds. In order to get away from the wrinkling of these sheets, institutions in the past have purchased rubber sheets, rubberized on drills of light weight canvas. To anyone who has been a patient in a hospital, there is no necessity for an elaboration of the discomforts of this sheet. By reason of the fact that a lighter weight sheet would wrinkle and cause greater discomfort, there has been no inclination to use such a one. In addition, in order to properly make up a hospital bed, approximately one yard of sheeting over and above the amount necessary has been used, to permit of folding it under the mattress.



There has been placed on the market a very simple set of straps that can be fastened to the spring, which are easily detached, and very durable. These straps make it possible to cut the sheet only three inches wider than the mattress, and hold it absolutely taut. With the use of a lighter weight of rubber sheeting and the consequent saving of price, combined with the saving incident to using a smaller sheet, to say nothing of the added comfort to the patients, it is believed that the commodity will easily justify the initial outlay necessary.

### LARGE TYPE SPHYGMOMANOMETER

One of the manufacturers of a standard sphygmomanometer recommends the use of the larger type sphygmomanometer particularly for institution purposes.

This company states that for the past several years there has been a growing tendency on the part of diagnosticians to study more and more closely the single beats of the hand of the sphygmomanometer when taking blood pressure readings. It is in the study of the single systole that the large type proves particularly valuable. The value of the sphygmograph and recording sphygmomanometer has always been recognized, but the inconvenience and difficulty attending their employment has greatly restricted their use. With this latest development of the sphygmomanometer, however, the manufacturer states that practically the same results can be obtained as with the sphygmograph, with the exception, of course, of furnishing a written record.

The delicate construction of the instrument gives a true representation of the arterial wave, magnified to such a degree that any abnormality may be easily detected, such as a small dicrotic notch or *pulsus bigeminus*.



## OCCUPATIONAL THERAPY AND INDUSTRIAL REHABILITATION

Conducted by HERBERT J. HALL, M.D., President, National Society for the Promotion of Occupational Therapy, Devereux Mansion, Marblehead, Mass.

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## OCCUPATIONAL THERAPY IN HEART DISEASE\*

BY FREDERIC BRUSH, M.D., MEDICAL DIRECTOR, THE BURKE FOUNDATION, WHITE PLAINS, N. Y.

THE two or more millions of people in the United States who have heart disease should rightly be included in the class of the handicapped, making a larger proportion thereof than is generally realized. In numbers they evidently come second only to nervous and mental defectives. Their degree of handicap varies from none to total; but the majority may with controlled and directed careers lead productive and fairly comfortable lives. They are known to rate well above the average, of the variously handicapped, in success qualities.

While the heart disease problem comprises, broadly, prevention, treatment, and occupation, we are concerned here only with a discussion of the applications of work therapy in rehabilitation. It is to be understood that suitable gymnastic exercises and active recreational therapies are proper complements of this work.

For our purpose but two classes of patients need be recognized—those with definite valvular or muscular heart defects, and the so-called neurocirculatory asthenia ("effort-syndrome" or "irritable heart") group; and but little distinction should be made between these in the convalescent stages of the therapy. The latter may be pressed a little more boldly from the start, and graduated sooner into sub-normal or full wage-work. There occur many exceptions to this, however, the psychoneurotic element being frequently a serious deterring factor with the latter class. This paper is mainly based upon an experience with over 2,500 cases of heart disease, of which more than 2,000 had valvular deficiencies.

### Inhibitions to Normal Life Eradicated Gradually

First to be overcome with cardiacs is the composite of prohibitions, fears, and ineptitudes—the result generally of persistent wrong advice of physicians, relatives, employers, teachers. Even the rapidly extending organization for cardiac relief has at times fostered this condition by over-separating and stressing the disability, until the prescription has seemingly amounted to no school, stairs, play, dance, work—resulting, generally, in "no good." The standard best attitude toward the cardiac now is: inform but don't scare; plan to keep going in the work-a-day world. A series of "don'ts" and "can'ts" is to be replaced by "do's" and "can's," until the person is restless and ambitious to venture nearly normal work-play life.

In order to discern the place of occupational therapy in

heart disease, a cycle of the best reconstructive régime may well be outlined. The patient recovering from an acute disablement is given light hand-work in bed or chair and exercised up to fitness for transfer to the convalescent home, where he is graduated, in a four to nine weeks period, through gymnastic exercises, diversional occupation, increasingly active physical play and grade walking, and short hours of actual work about the institution, often for a handicapped wage. Gradual advance to full time employment in the institution, with retention of medical oversight, leads to a return later to the former job or to another, expertly chosen by the follow-up agency—with expectation of reasonable steadiness of employment in competitive life, variously modified.

### Various Therapeutic and Restorative Procedures Available

Therapeutic occupation, as usually understood, has a definite but limited part in this scheme. It fails of wider use because it does not furnish enough physical exercise. Its highest value is mental, in overcoming doubts, inertias, and deteriorate habits. It gives a practical and most valuable test, and a basis for further advances. Its application may begin modestly in the hospital or the home, finds fullest opportunity in the convalescent institution, and should be applied as well to the more seriously crippled cardiacs wherever located, whether in institutions for chronic diseases or elsewhere. The most promising field of extension now is the general hospital, where occupational therapy would not only benefit heart patients directly, but would tend to influence physicians to give



Carpentry is one of the practical fields of industry which the cardiac may safely enter.

\*Read at the convention of the National Society for the Promotion of Occupational Therapy, Philadelphia, 1920.

the longer stay commonly denied, and yet so urgently needed.

Practically all kinds of standard restorative occupations are applicable to the convalescent stage of heart disease. The usual adjustments of the work to nerve states, aptitudes, and to temperamental conditions is assumed. Those with low heart and general reserve power are given sitting or lighter shop details, but are soon graded into work requiring more exertion. It is instructive to see these patients take on increasing physical activities, with steady gains in cardiac reserve, until they are, simultaneously with participation in active sports, walking, stair-climbing, gardening, lawn-mowing, pick-and-shoveling, chopping, lifting and carrying, etc. Thus the occupations giving most exercise, outdoor and near nor-

instances. Right work placement and follow-up are essential. Employment bureaus for the handicapped in the large centers are also greatly needed.

### Broader Conception of Work Therapy

By thus widening the conception of work therapy we include the phases that vitally concern the heart handicapped. "On the job" therapy is of the most importance to them. Schooling and home keeping are understood as full life work. The recent management of a heart diseased youth may give pointed illustration. After the physical and mental exercise convalescence period, he was placed in the office of a sympathetic and understanding architect to learn the business, on a fair wage, was given reasonable hours, daily rest period, and time to visit medical and social service sponsors, and with increasing endurance took on technical studies in the schools. Within two years he has advanced quite rapidly, and has prospects little inferior to the normal. He keeps in contact with expert advisers. This is long-term occupational therapy at its best.

Special factories for cardiacs only, are of doubtful feasibility, and can benefit only a comparatively few. But through school and office, store, shop, garage, garden, hotel and factory, these seriously handicapped persons may be trained and guided, and fitted for measurably full and successful lives. And thus far, the only practical test of fitness for selected work is trial in the work. Soon the work becomes more than test; is best continuing therapy.

The question of what the heart diseased can do is rightly answered by learning of what they have done and are doing successfully. "Go to the country," is ill advice still too frequently given. Readjustment near home and in or allied to the former line of occupation is generally wisest. Exceptions, as in changing from too heavy physical stresses, are, of course, required. Nerve and mental and social tensions are constantly un-

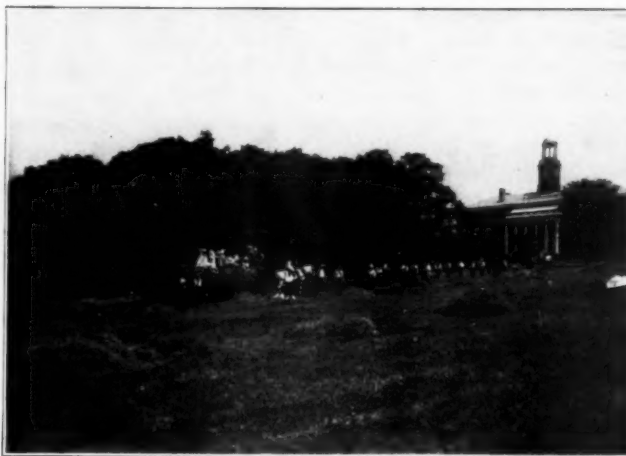


Sewing, taught in groups such as this, will furnish a livelihood for a woman who perhaps, up to this time, has belonged to the non-productive class.

mal, are favored. Especially should the patient be urged to do the work that he feels sure he cannot do, for mental therapy reasons. Objection and demur are the rule, but the entire list gives almost no occupations that prove detrimental.

Vocational training, while not strictly within this subject, so interweaves with it as to invite discussion. Abundant experience here and abroad shows that cardiacs suitable for constructive institutional convalescence require an average stay of about five weeks only—three to ten weeks, fitting the various kinds and degrees of disability. Longer terms add little or nothing to the benefits, and are in themselves often detrimental in causing detachments from normal life, from family, school, job, friends, and helpers. Vocational education should not be attempted in this period, which is well occupied with the upbuilding activities as noted above.

Continuation schooling for children is, of course, desirable; and a small amount of prevocational direction may be given to those remaining the longer terms. A small percentage only of cardiacs will ever pass through such institutions. Any vocational aid plan worth while should include the majority. This may be accomplished by using, after good convalescence, the established standard instrumentalities, the public and trade schools, the office, factory, store, and workshop. The cost is negligible; and the needed personal influence support is kept near at hand. Adequate direction and medical oversight are provided by the parents, school staffs, special heart clinics, social welfare agencies, private physicians, etc. Modest financial assistance may well be given in some



Haying, strenuous as it is, seems to agree with these patients.

derestimated as contributory factors in heart overstrain.

Surveys following six years of special heart direction, convalescent reconstruction, occupational replacement and adjustment, and follow-up of cardiacs now numbering in thousands afford inspiring confirmation of the value of work therapy as here interpreted. The branches of activity which may be taken up are manifold. Accounting, architecture, work on automobiles, bookkeeping, bookbinding, basketry and cane work, all kinds of clerical work, card indexing, checking, gardening, stenography, salesmanship (if the samples are not too heavy), sewing,



shoemaking and cobbling, typewriting, typesetting, tailoring, millinery, music, nursing, packing, painting, printing, and publicity. Various industries offer opportunities, such as doll factories, garment factories, biscuit companies, piano factories and tuning organizations, wire industries, wicker furniture factories. Also such positions as helper on country places, electrician, elevator runner, electric machine operator, engraver, errand runner, janitor, worker in kitchen, or ticket taker are possible to the cardiac.

Consider from the above the varied opportunities indicated under such simple headings as clerical, small business, department store, jewelry trade, telephone, salesmanship, factory, home making, and the impracticability of segregating for purposes of trade teaching. These millions of safe and desirable handicapped have nearly full right of choice in mode of living, and are very prone to exercise it. Medical, industrial, and social adjustment in the "working world about," should give main direction to organized welfare in their behalf.

### OCCUPATIONAL THERAPY FORECASTS AND SUGGESTIONS

By HERBERT J. HALL, M.D., President, National Society for the Promotion of Occupational Therapy, Devereux Mansion, Marblehead, Mass.

The art of prescribed work for the handicapped will continue to hold a high place, and to progress, for it is one of the expressions of an abiding principle. But the technic of the art, its practical application, is due for many changes, improvements, and readjustments.

Occupational therapy has been accepted so readily, and our preparation has been so hasty, that the demands for aides already exceeds the supply. The danger is that we shall rush new teachers into the field too fast, and so bring them and the system into disrepute. We cannot afford to be hurried.

It might be possible to benefit hospitals and the cause, if we could establish a novitiate training in the wards. This would imply the presence of highly competent head aides, of which there are none too many. Some of the successful aides have gone out of service since the war, but might be called back if sufficiently attractive teaching positions were offered. It is a strange state of affairs when the hospitals are calling for finished aides before the schools have fully standardized their courses. But we can comfort ourselves with the assurance that there are many experienced aides in service, who are setting high standards and who are gaining wide experience. Moreover, the schools are steadily advancing in their requirements and in the quality of their teaching staffs.

The aides already in service are doing splendid work, but they must remember always that the profession is plastic and progressive. They should keep in touch with the schools and through the national and local societies keep up with the progress made. It is a healthy sign that local societies are multiplying; they should have frequent meetings and full discussions. Such societies will undoubtedly be a very valuable means of communication between members of the profession, and thus a means of progress. The National Society merits full support, for only through its publications, and through the opportunity given by its annual meetings, can the whole country benefit by local experiences. Every member of a state or school society should belong to it. Application blanks may be obtained by addressing Mr. Louis J. Haas, treasurer, Bloomingdale Hospital, White Plains, N. Y. We need a national consciousness. Local pride is right and proper, but our cause is nation wide.

### POINTS ON PREOPERATIVE CARE

Preparation of the patient for the operation is as much the duty of the anesthetist as administration of the anesthetic. Time required for the preparation is dependent upon the kind of operation, but at all events the start should be made as soon as the surgeon has decided on the operation. Keeping the patient in the hospital for preoperation care whether the minimum time of 48 hours or the maximum of several weeks is not, as has been so often supposed, a disadvantage which is apt to create super-nervousness; but may on the contrary react favorably in acclimating the patient to the hospital and in acquainting him with the nurse.

A full physical examination is the foundation for preoperative care. With it should go a quantitative and qualitative examination of the urine which will give not only the results of a simple chemical analysis but also accurate knowledge of quantity, of presence or absence of albumen, sugar, acetone, diacetic acid, and of specific gravity. Particularly important is the test for acetone. A great deal of worry and anxiety may be saved if considerable use is made of the safety signals explained by the work of Polck on "Blood Pressure" and "Phthaleim Output," the value and importance of which are reinforced by McKesson, Miller, and others in their work on blood examinations. Also functional tests and examinations for acetone should not be neglected. Among the most trying obstacles—one which can be in large measure avoided if more extended use is made of the clinical laboratory—is acidosis. Laboratory work for diabetics too is of inestimable value.

Preoperative care is also a sign of advance from the obsolete idea of starving patients to the sane position of sending them to the operation in as sound physical condition as possible so that their convalescence may be shorter and more pleasant.

All of these examinations are made and this preoperative care taken with a view not to enlarging the difficulties of surgery but to enhancing the opportunities for success of the surgeon and the peace and comfort of the patient.

### HEALTH THROUGH HARD WORK

The physique of the great majority of English women engaged in industry has been distinctly improved as a result of wartime experience in rationing and exercise resulting in the more strenuous occupations taken up by women, according to Dr. Winifred Cullis, Professor of Physiology in the London School of Medicine for Women, University of London, in an interview recently reported by the *New York Times*. Dr. Cullis says the physique of English women is much above the physique of women in this country and Canada. This was clearly shown by the resistance English women showed to fatigue in the hard work of munitions factories, she said.

"The improved wages which the women workers now receive will enable them to continue on a sane, healthful diet," said Dr. Cullis. "It was lack of money rather than a taste for sweets-and-pickles type of luncheon which forced the girls to buy this non-nourishing food, but with the improvement in the wage scale the girls turned to better food, and the good old roast beef and vegetables had their day.

"A woman is not being a good woman unless she looks after her body as well as her soul. This is becoming increasingly evident every day. I believe that nearly every one can work eight hours a day without any likelihood of bad results to their physique, either while engaged in the work or in the future.

## HEALTH AND MODERN INDUSTRY

### HOSPITAL DEPARTMENT OF INDUSTRIAL PLANT SUPERVISES SAFETY WORK

BY SANFORD DEHART, M.D., DIRECTOR OF HOSPITAL, R. K. LeBLOND MACHINE TOOL COMPANY, CINCINNATI, O.

MANY industrial managers of concerns employing less than one thousand persons are of the opinion that they are not justified in employing a full time safety engineer.

The safety and accident prevention work of a factory, whether large or small, requires constant supervision. Sometimes this work can be delegated to the employment man, but more often it can be handled by the medical department. Realizing this, the R. K. LeBlond Machine Tool Company has placed the accident prevention under the supervision of the hospital department.

The hospital department of any plant is a clearing house, through which the injured must necessarily pass. If the medical director is alert, he can usually make remedial suggestions, so that at least the same condition is not productive of a similar accident, even though he may not have originality enough to anticipate accidents, or sufficient engineering skill to design a guard. The prevention of industrial accidents is as much a selling problem as it is an engineering problem. A selling problem not only to the workman and foreman but to the higher executives as well.

#### Causes Contributing to Accidents

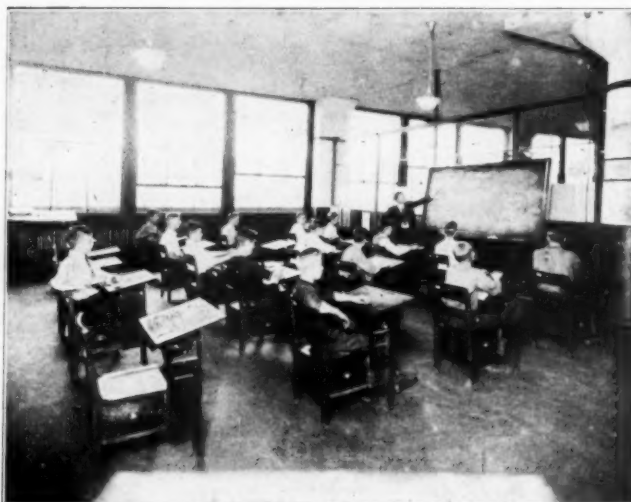
We who are engaged in hospital and accident prevention work know that a number of different causes contribute to the accident problem. For the sake of convenience, they may be divided into three groups, mechanical, physiological, and psychological.

Mechanical deficiencies can often be remedied by enlisting the cooperation of the engineering department. This department then sees to it that warning signs and safety devices are provided. When a new machine is to be guarded or additional safeguards placed on old machines, it is generally a good plan to confer with the operator, whose suggestions are often worthy of adoption.

Physiological causes may be due to a sleepless night, tooth-ache, mental worry, venereal disease, or in fact any disease. I have known a simple coryza to be indirectly responsible for causing an accident. In the LeBlond plant, we have not found fatigue to be an important factor in causing accidents. Fatigue, as we all know, is a complex problem and not easily interpreted, the identification and measurement of the condition of industrial fatigue in a machine tool plant is by no means an easy one. The workman's capacity for turning out work is a

poor index to the amount of fatigue present. Fatigue control in the machine tool industry at this time presents a difficult problem. The accident frequency rates in certain heavy industries, such as the iron and steel, might possibly be influenced by fatigue. Last year, beginning May 1 and ending September 30, an intensive campaign of accident prevention was inaugurated by the LeBlond Company. Every item that might enter into the accident problem was taken into consideration. These months were selected because of the belief that fatigue is a prominent cause of accidents, and this cause would be present more frequently during the summer months. During this period sixty hours were lost through injuries among 1,000 employees. During the month of June there was no time lost, and in August there were ten hours lost.

The psychological causes of accidents are ignorance, carelessness, over-familiarity with employment, unfamiliarity with employment, lack of confidence, lack of discipline, and the susceptibility of the individual to accidents. Accidents do not always happen as the result of objective danger. Individual characteristics of the employee have considerable to do with accidents. It has long been known that the human factor is the chief factor in 80 per cent of the accidents, safety engineers generally agree that



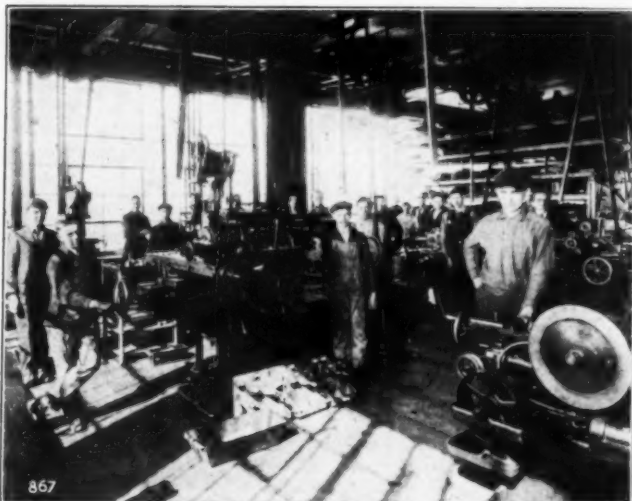
Apprentice school, where the boys receive instruction in shop mathematics, and methods for accident prevention.



no more than 20 per cent of the industrial accidents can be prevented by safety devices or any kind of mechanical equipment. In plants where considerable guarding has already been done in conformity with state or insurance company requirements, an analysis of the accidents which still occur will generally show that no more than 5 or 10 per cent of them can be prevented by other guarding.

### Hazards in Machine Tool Industry

Since I am at present engaged in looking after the hospital and safety work of a large machine tool plant, I shall confine my contribution to the prevailing hazards



Shop training school.

of this industry, and the methods pursued in reducing accidents and absenteeism. Many of the conditions mentioned and the remedies suggested are equally applicable to other industries.

The prime requisite for establishing a safety department, which is to be operated in connection with the hospital department, is to procure the foremen's cooperation. Very little can be accomplished without their cooperation and good will.

It is also of importance to plat the factory in departments, so that an idea may be gained as to the accident frequency of certain hazardous departments. When the accident frequency has been ascertained, a remedy can usually be applied. To illustrate, our records showed there were a great many men coming into our hospital from the paint department, with foreign bodies in their eyes. Many of them were suffering also from respiratory conditions. These men were kept under observation for five months, and were instructed to wear respirators to prevent industrial respiratory conditions, and goggles to prevent the foreign bodies blowing into their eyes. Notwithstanding all the safety education, there was very little accomplished in reducing the hazards in this department. Traumatic conjunctivitis, blepharitis, and keratitis were particularly prevalent. We conferred with our engineering department, and with their cooperation an exhaust bench was installed, which has practically eliminated these conditions.

A brief description of this device will not be inappropriate. It is simply a bench built along standard lines, connected with an exhaust fan system. The dust, dirt, lead, and other ingredients of the paint are sucked through this exhaust system, through grill work in the top of the bench, and disposed of outside of the shop.

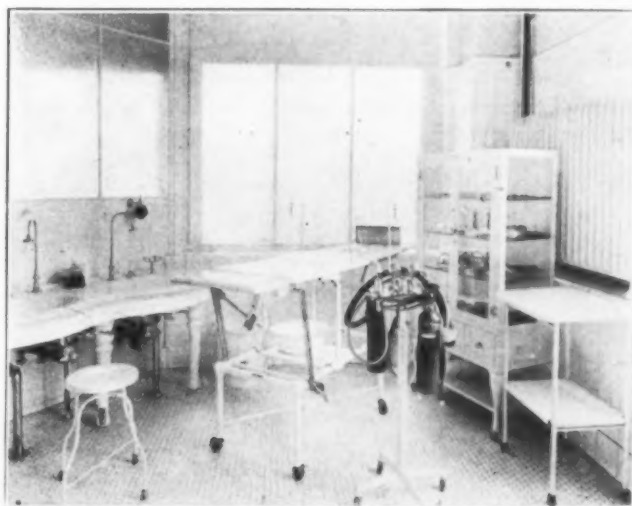
The benches are of the standard type adopted for work benches, being made of standard and interchangeable parts, such as legs, drawers, runners and other material, which are carried in stock in interchangeable units, and assembled as required. Each of these grills is connected by a independent duct with the main exhaust line, which parallels the length of the bench and is connected to a large fan, which exhausts into a large vertical duct running through the roof of the building.

All of the painting and filling of cast iron parts, with the incidental rubbing down between the application of various coats, is done on this bench. All the grinding of small parts, which have to be ground to remove rough edges, which the painter would otherwise have to chip off, is also done on this bench.

Careful records have been kept in the hospital department, and the employees of this department placed under special observation for respiratory and eye conditions. This device has been in operation for fourteen months and the results obtained have been gratifying. Blue prints of the device will be sent to interested persons.

### Grinding Wheels Dangerous

Grinding wheels are also a constant source of danger. The hazard of bursting grinding wheels has long been recognized, and effective guards have been designed to minimize the danger. There is also the additional hazard of the flying sparks, which often become embedded in the cornea, if goggles are not worn. Occasionally a piece of emery will become adherent to the eye, even when goggles are worn. This hazard can be greatly minimized by placing a glass shield over the wheel. The grinding wheel department of any plant is the one department which furnishes an incentive to the safety man to continue safety work. In one machine shop 40 per cent of the men reporting for treatment were suffering with foreign bodies in the eyes. In one year's time the medical and safety men of this shop were able to reduce the eye



This operating room has been used only twice in the last three years.

injuries to 7 per cent of the total number treated in the hospital for all causes. Most manufacturers of grinding wheels provide a hooded guard, to withstand the shock of the bursting wheel. The guard is adjusted close to the wheel and extends over the top of the wheel to a point at least thirty degree beyond a vertical line drawn through the center of the wheel.

Grinding wheels should, when practicable, be provided

with safety flanges. The principal function of the safety man in connection with grinding wheels is to see to it that the guards are in proper place, that they are not removed, that they do not interfere with the operation, and that the operators wear goggles. An approximate idea may be gained of the hazard present in grinding wheels, when you take into consideration that in actual practice wheels are run at a surface speed of from 4,000 to 6,000 feet per minute up to as high as 7,000. To reduce the hazard of breaking, it is recommended that for most operations surface speeds should not exceed 6,000 feet. As a wheel wears down, the speed is increased to maintain the same surface speed, and great care must be exercised when a new wheel is provided, to avoid over-speeding.

Among the other hazards of the machine shop that might be, and usually are, productive of accidents are oily floors which become slippery. Mopping floors with a solution of sal soda will greatly minimize this hazard.

Crowded aisles are another hazard. Safety aisles should be layed out, one for "up" travel, and one for "down" travel. Each truck should be equipped with a horn or bell to warn of its approach. The internal transportation of materials affords a serious danger.

Overhead electric cranes require considerable safety supervision. The General Electric Company has issued a safety pamphlet on this subject, which is very interesting and instructive. The writer would also suggest that all overhead cranes be operated by foot in stead of by hand.

Sacro-iliac sprains are usually very common around the machine shop and they are the bane of the medical attendant's life. We have greatly reduced our "sprained back cases" by teaching the men in heavy lifting departments the proper way to lift. A pamphlet describing the proper way to lift may be procured from the National Safety Council. There are also a number of lantern slides procurable which teach the employees to guard against such injuries.

### Overcrowding Contributes to Danger

Overcrowding of machines or limited aisle space presents a serious hazard. In plants where machines are placed close together the accident rate is invariably higher than those in which there is ample space provided.

All open gears should be protected by a guard, these guards to be in accordance with the state regulations. Cleaning, adjusting, oiling, or repairing machines while in motion should be strictly prohibited. Loose hair and loose garments constitute a serious danger through their liability to become entangled, or caught in drills, or other tools.

Finger rings should not be worn in the shops, as there is always a possibility of their becoming caught in the tools. Also, when a finger is injured upon which a ring is worn, the ring usually has to be filed or snipped off, which occasions a great deal of pain and renders the initial treatment of the wound difficult. Fingers should be bandaged so there will be no loose ends to become entangled in the tools. Painting the bandage with a mixture of collodion and thymol iodid will prevent the bandage from fraying.

In arduous occupations, the workers should be examined for congenital hernia.

All protruding set screws should be eliminated as far as practicable. They should be either counter sunk, or they may be made of hollow form, flush with the collar.

Chipping operations present a serious hazard. This can be minimized by placing a screen between chipper and



Nose and throat room.

fellow employee. In this connection, a man operating a compressed air blower should be instructed to wear goggles, and also warn his fellow employees when he is going to use a blower.

Emery, carborundum, and polishing wheels should be equipped with blower and exhaust system, and the men of this department kept under observation for respiratory conditions.

Automatic belt shifters should be substituted for the ordinary wood belt poles. Belts may be reckoned among the industrial appliances which have been productive of a great many serious accidents. These have come largely from the hands coming in contact with the metal lacing. These lacerations are generally severe, requiring suturing. This type of injury can be largely eliminated by the substitution of rawhide or leather lacing, instead of the metal lacing.

Stairways should be equipped with safety treads, and kept free from litter.

Workmen operating crane chains should be cautioned of the danger of catching fingers in links of the chain. I have found, however, even with the best safety education, some of our older workmen will inadvertently put their fingers in these links.

Defective tools and appliances are always a source of injury to the workers. Broken hammer or chisel handles, wrenches, screw drivers, mushroom headed hammers, all contribute their quota to the accident list, and a great many times they exceed their quota.

As a general proposition, the medical attendant will be informed of the danger of the workmen using defective tools, via some workman coming into the hospital with an injury from that cause. This should be his cue to make, as far as possible, a general survey of the tools in use. This will require some tact, but it can be accomplished.

### Weights and Falling Objects Serious Problem

It has been well known for some years that moving machinery is not as productive of serious injuries as weights and falling objects. The frequency rate of machine accidents is somewhat high, but the severity rate is comparatively low. Up to this writing, November 24, 1920, we have not had an amputated finger or a finger necessitating amputation in our plant for the past three years. This is remarkable in view of the fact that the fingers are the most exposed part of the anatomy. In



this connection, I might add that we have an operating room in the LeBlond hospital, but we have had occasion to use it only twice in the past three years. We have had, however, some serious contusions from weights and falling objects. The heavy lifting departments exhibit the most striking opposition between severity rates and frequency rates.

Corrugated hammers will reduce the flying nail hazard in any shop considerably. Broken or weak ladders, or ladders with missing rungs should be destroyed. In this connection, it is recommended that ladders be equipped with metal points or lead coated bases for wooden floors, carborundum bases for use on iron floors. Pivoted lead shoes of carborundum are recommended when ladders are to be used on concrete floors, and recessed rubber bases when used on wet floors.

In suggesting these safety devices I have been guided solely by the accidents occurring in three plants for the past four years. There may be other hazards in the machine shop that I have not mentioned, but those I have mentioned have, in my experience, caused the most accidents.

It is well known that the new employee has an extraordinarily high accident rate. We have in a measure reduced the accidents among our new employees by giving them safety lectures, accompanied by lantern slides. All inexperienced men, whether apprentices or not, must first pass a probationary period in the instruction school, which is situated on the top floor of the building. These young men are shown how to avoid accidents, and the older ones why they should avoid accidents. These men are taught the rudiments of machine shop work, and they are not released until the "rough edges" have worn off, or not until they have adjusted themselves to their new environment. Safety lectures, accompanied by lantern slides, moving pictures, and pictorial bulletins, are quick to attract the eye. The most valuable ones are those issued by the National Safety Council.

#### Relation of Venereal Question

We were of the opinion that the venereal question entered into the accident problem, and we therefore gave a series of lectures of fifteen minutes duration, during the lunch hour period. We felt that we were better qualified to deliver these lectures to the men than to have some agency outside of the factory do it, as we were directly in touch with the local conditions in the plant, and had a thorough understanding of it. The delivery of a lecture of this character should not, if the hospital is functioning properly, reveal anything regarding venereal trouble not already known to that department. The practical purpose of the lecture was to teach the men that gonorrhea remained gonorrhea, and that chancroid is always a chancroid, and a syphilitic sore is the initial lesion of a constitutional blood disease. The commonly accepted lay idea that gonorrhea may ultimately develop into syphilis, and that chancroid (soft sore) is sometimes the cause of syphilis, is the main thing that an educational campaign clears up in the minds of the audience. We also spoke of the danger of contaminating the cutting oil, and how it would be possible to transfer the infection through this medium.

It is to be assumed that if the hospital department has anything to do with the sanitary and illuminating factors, they will be properly cared for.

In considering the ventilating problem in its relation to accidents, it is important that the hospital director have a comprehensive knowledge of the composition of pure air, the physiological importance of air, and the methods em-

ployed to remove impurities. Dust determination, and air conditioning of a machine tool plant are factors that make a long story and would be inappropriate in this contribution.

In conclusion, I wish to say that while we have expended considerable time on the subject of accident prevention in the LeBlond factory, the results accomplished justify its continuance. Our records show that our absenteeism due to injuries in the plant is approximately seven and seven-tenths minutes per year per person, and we believe this can be reduced 50 per cent.

#### HEALTH AND IMMUNITY

A. M. ROVIN, Ph.D., Detroit, Mich.

There is much said and written in the lay press about the importance of correct living as a means of maintaining good health and this thought is often carried to a point where one is led to believe that enjoying good health is equivalent to being immune to contagious and infectious diseases. Many people have an idea that a "healthy" person can withstand infections and that not withstanding them is evidence of some inherent weakness existing in the individual which places him below a proper health standard. Such a requirement would place practically every human being below a normal health standard because none of us is in a position to withstand all the various infecting organisms known to cause disease in man. The vast difference between being healthy and being immune to infecting organisms has long been recognized by bacteriologists. Every day experience gives us numerous examples. In a family of children exposed to scarlet fever the most robust may have a severe attack and die while a less healthy member of the family may escape the disease entirely. Typhoid fever does not usually occur in the weakest member of a family, and pneumonia often occurs in people enjoying perfect health prior to the attack. Measles and mumps are known to run a more severe course in adults than in children not because adults are less healthy but because they have less resistance to the germs causing these diseases. So in considering health conditions the problem of immunity and avoiding disease producing germs should be constantly kept in mind. Isolation and disinfection will accomplish much in limiting and possibly eventually eliminating contagious diseases; but in diseases caused by the pus organisms, immunization, from the universal prevalence of these germs, must constitute the most important factor in controlling diseases. By immunizing against colds many cases of broncho-pneumonia, pneumonia and pulmonary tuberculosis will be avoided. The ravages of infected wounds and puerperal sepsis may also be avoided by early immunization against the pus organism causing these infections.

Correct habits of life are important factors in maintaining health, but where possible disease germs should be avoided and where infections existing or are liable to occur, immunization should be practiced.

#### Reports Used in Social Service

In hospital social service work, such a large volume of material is usually collected that the reports are clumsy and difficult to use. The Chicago State Hospital has found it very satisfactory to have a summary of the investigation made and given to the medical division, the social service department keeping a duplicate copy on file. The physician, then, instead of having to wade through pages of material, has a brief report before him, which contains all the necessary information.

## DISPENSARIES AND OUT-PATIENT DEPARTMENTS

Conducted by MICHAEL M. DAVIS, JR.  
Director, Boston Dispensary, 25 Bennet St., Boston

### RELATION OF THE DISPENSARY TO THE HOSPITAL\*

By RALPH B. SEEM, M.D., DIRECTOR, ALBERT MERRITT BILLINGS HOSPITAL, CHICAGO, ILL.

IN A consideration of the relation between the dispensary and the hospital, the many possibilities of such a relationship which may be mutually advantageous immediately present themselves. This is particularly true when the dispensary is the out-patient department of the hospital and is housed in a building on the hospital grounds. Experience has shown that dispensary clinics have certain weaknesses when standing alone, when they do not have hospital support and hospital facilities. With the proper association between them it is possible for each institution to do better and more complete work.

Many patients require treatment as ambulatory and as bed cases, the one period supplementing the other. As for example patients suffering with chronic diseases of the heart, kidneys, lungs, disorders of metabolism, arthritis and many other conditions that are subject to acute exacerbations, need hospital care from time to time. There are a large number of patients for whom the dispensary examination indicates hospital treatment. This is particularly true of patients examined in the surgical, gynecological, nose and throat, obstetrical departments, and many others. Hospital beds are essential for the service of an obstetrical dispensary which cares for patients in their homes, patients for whom, one must be prepared to meet the development of complications and conditions which can only be properly treated in a hospital. In a pediatric dispensary many patients are treated who should be admitted to the hospital in order to tide them over critical periods in the course of their treatment.

Patients discharged from the hospital, who require further observation of their response to hospital treatment, continued supervision and treatment, or dressings in a surgical case, can best be cared for in the dispensary, further observation of their response to hospital treatment, rather than having them go to the operating rooms or to the hospitals. They may return at times when it will be possible for the house doctor to see them, should that be desirable. This arrangement permits of a more intelligent after care and a better supervision of convalescence for certain types of cases. As patients pass from one department to the other it is important that the continuity of their treatment should not be interrupted.

A maternity ward with the necessity of pre-natal work and post-partum visits is handicapped without the facilities of an out-patient clinic. In a certain maternity clinic, which is a department of a large hospital, it is cus-

tomary before discharge for the mothers who live within a certain district surrounding the hospital to take their babies to the pediatric dispensary. Here the child is registered and a personal relationship is established with the mother. She is told to return with her baby at intervals for observation, or at any time, if the baby does not do well or should she desire advice concerning the health of the child. In time this institution will have available for study, valuable records of children from birth to adolescence.

Many patients apply to the hospital for admission who do not need hospital care and should be treated as ambulatory cases in the dispensary. To determine into which class patients fall often requires careful study and pains-taking examinations by one or more specialists. These can be better carried out in the dispensary than by the examining physician of a large hospital who may not have the time or the training and experience to go into the case as thoroughly as may be necessary in order to arrive at a proper decision. In hospitals where the admitting system provides for the examination of these patients by members of the house staff, there is necessarily interference with their routine hospital duties, some of which may be impossible to interrupt, with the result that the patients are often kept waiting for examination, what must seem to them an unreasonably long time. As most hospitals have more requests for admission than they have beds available it is important that they should not be occupied by patients who might be going to a dispensary for treatment or for study and observation. If the admitting officer of the hospital will exercise care in sending to the dispensary for examination, and possible treatment, all patients for whom it will not be a hardship to wait until the next dispensary hour, fewer patients will be unnecessarily admitted to the hospital wards and the time of the house staff will be conserved; also the duration of stay in the hospital will be reduced for a certain number of patients, because many of the tests and special examinations indicated for a given case can be made in the dispensary. This method has been in use for a number of years at the Johns Hopkins Hospital. During the year 1919, 3,473 patients were admitted to the hospital on recommendation of the dispensary.

Ward patients may be sent to the dispensary for examination by specialists and even for special treatment. In this way it is often possible to secure the opinion of the specialist in a shorter time than when it is necessary to wait for him to come to the ward. The examination

\*Read before the Twenty-Second Annual Convention of the American Hospital Association, Montreal, Canada, October 4-8, 1920.



can be conducted more conveniently in the dispensary department, which is especially equipped for it, and the necessity of preparing for the examination in the ward will be saved. The coordinate use of the dispensary departments by the hospital staff will have a tendency to maintain on a high level the standards of work of the dispensary which should have the same medical standards and ideals as the hospital.

#### Duplication of Service and Equipment Avoided

When the dispensary and hospital are located in the same physical plant, the duplication of special apparatus, equipment, and service can be saved as there are certain facilities which may be used in common. While it is desirable that there should be laboratories in the dispensary departments for the simple routine examinations, the more pains-taking tests and finer analyses should be made in the hospital laboratories. The services of technicians, and the reagents and supplies for the dispensary and hospital laboratories may be furnished from a common source. If properly located, one drug department will suffice for both. The same will be true of the mechanotherapeutic and hydrotherapeutic departments and röntgenology.

The training school of the hospital should supply the nurses for the dispensary. If the head nurse of the dispensary is a member of the staff of the superintendent of nurses, the training of the nurses while in the dispensary may be carried on without interruption. With a definite plan of supervised instruction while working in the different clinics, the pupil nurses should have a better appreciation of the health and social problems of the community because of their dispensary experience.

One social service department should serve both hospital and dispensary. That part of the work of this department which has to deal with patients who require hospital care is greatly facilitated when it is possible to follow these cases through the hospital without the necessity of transferring these patients to other agencies.

#### Dispensary Staff Has Other than Monetary Remunerations

It will be found advantageous to have members of the resident hospital staff regularly assigned for work in the dispensary, for which they will be held responsible. They will not only be of assistance in carrying on the work but as much as anything else will help to cement the tie between the work of the wards and the dispensary.

It is well recognized that it is impractical, because of the expense, to offer adequate monetary remuneration to the dispensary staff for their services, for which other means of compensation must be sought. As a hospital department, a dispensary offers greater opportunities in professional recognition and advancement. There is an added prestige in the appointment on its staff; and the associations are generally of greater value. Opportunities afforded members of the staff to make themselves expert in the diagnosis and treatment of certain types of diseases in which they are interested, may lead to their being called in consultation for cases of this kind admitted to the hospital, if not to treat them. Some institutions provide for the promotion of members of the dispensary staff, for meritorious work, to the hospital staff.

Interest in the work is also greatly increased with the opportunity of following patients into the wards, of observing their response to hospital treatment, of seeing the dispensary diagnosis confirmed or refuted, it may be by operation or at the autopsy table. The value and interest of the dispensary service is further enhanced for

the dispensary staff, if it is possible to send into an observation ward for a limited period, a dispensary patient on whom it is desirable to secure continuous observation for twenty-four hours or to watch the response of the patient to a certain test or a given treatment, or to recover from the effects of a minor surgical operation. If this arrangement is possible without the necessity of having these patients admitted as cases of the hospital staff and thereby passing out of the jurisdiction of the dispensary staff, it is an especially valuable one.

A proper system of records is essential. The dispensary history should be sent to the ward and at least a resumé of the hospital findings, diagnosis, treatment, and results should be prepared by the resident staff to be recorded in the dispensary history. The records of the hospital and dispensary should be under the supervision of the same history clerk.

The question of organization is a very important consideration. The dispensary should be under the same administrative control and its medical policies should be determined by the medical board of the hospital. The chiefs of the various hospital services should be in charge of the corresponding departments in the dispensary, where they may be represented by their associates and assistants as physicians and surgeons in charge of the departments. That the desires and opinions of those actually doing the work, I refer to the dispensary staff, may receive proper consideration, they should select from among their members, representatives who would constitute an advisory committee, through which recommendations concerning the welfare of the dispensary should be presented to the medical board of the hospital.

To secure the advantages and benefits from the correlation of the work of the hospital and dispensary suggested in this paper, some of the results will depend upon the arrangement of the building in which the dispensary is located and its relation to the rest of the hospital, more, however, upon the organization, and most of all upon the desire of each person concerned to do his or her part toward that which is considered best for the patient, and a readiness to give as well as to take, in other words an *esprit de corps*.

#### BOOKS FOR TUBERCULOSIS HOSPITALS

The American Library Association, through its library war service, is doing some interesting work at the various Public Health Service hospitals. For instance, in the Public Health Service Hospital at Greenville, S. C., the library sends books for the use of the patients, and they are trundled around the wards on a cart or truck, so that the patient may choose the book in which he is most interested. Most of the patients in this hospital are suffering from tuberculosis, the majority are young soldiers, sailors, and marines who served in the war, but there are also a few old seamen. All tastes and temperaments are represented. Some of the men are looking forward to an out-of-door life, and want books on farming, etc.; others, who cannot return to their old trades, want vocational books giving some definite information about some new work. Some of the old seamen prefer Dickens or Thackeray, or perhaps books of history. The progress of the book-cart through the wards is always hailed with enthusiasm.

Many public libraries are unwilling to lend their books to patients in the tuberculosis hospitals, either government or private, and the American Library Association is trying to remedy this by sending books from its tuberculosis hospital library to War Risk cases in other institutions.

## VENEREAL DISEASES AND THE HOSPITAL

Conducted by ALEC N. THOMSON, M.D.

Director, Department of Medical Activities

The American Social Hygiene Association, 105 W. Fortieth St.,  
New York City

### IT PAYS TO "FOLLOW UP"

Many a clinic chief receives a severe shock when told that an analysis of his clinic records would show an average of only two visits for salvarsan, per patient. But upon carefully going over his records he almost invariably finds the statement to be true.

In 1914 an analysis of the records of one of the best clinics in New York City showed that 29 per cent of the patients had failed to reappear after one treatment; 58 per cent after five treatments; and 71 per cent after ten treatments.

At that time social service "follow-up" was in its infancy; but soon after, methods for retaining patients for periods of efficient treatment began to improve, until, by 1916 marked progress was being recorded.

A clinic that had initiated a system of "follow-up" for venereal patients showed a loss in the year 1916 of only 11 per cent after one treatment, 40 per cent after five treatments, and 57 per cent after ten treatments. This was real progress, measured by pre-war standards.

The war has materially changed the attitude of the government and the public toward venereal disease, and with the change, the standards of four years ago have been revised. A study of the records of 162 cases of syphilis admitted to a clinic in New York City between July 1, 1919, and June 30, 1920, gives the following analysis: of these 162 patients, sixty-seven, or approximately 41 per cent attended the clinic for their last scheduled visit in June, or reappeared during the following six weeks. This, of course, includes those who were admitted toward the end of the year, and does not give a fair idea of the rapidity with which they disappear from observation. Of the ninety-five who dropped treatment, there were ten transferred to other clinics or private physicians, eleven transferred to another department of the dispensary or admitted to the hospital, four who left the city, and three advised to discontinue treatment, making a total of twenty-eight. Of the other sixty-seven who dropped treatment for inadequate reasons, some were of the irresponsible type who could not be persuaded to return, in spite of frequent "follow-ups," some could not afford the time necessary for treatment, some became discouraged because their symptoms did not improve, and a number dropped treatment as soon as the symptoms, of which they complained upon admission, cleared up. Another small group disappeared after having had salvarsan reaction or a mercurial stomatitis. For the majority, however, it was impossible to assign the cause of their delinquency. Upon tabulating the number of weeks each patient attended, the following figures were obtained: one visit, 100 per cent; one week, 90 per cent; one to two weeks, 86 per cent; two to three weeks, 84 per cent; three to four weeks, 83 per cent; four to five

weeks, 75 per cent; five to six weeks, 72 per cent; six to seven weeks, 67 per cent; seven to eight weeks, 64 per cent; two to three months, 63 per cent; three to four months, 48 per cent; four to five months, 40 per cent; five to six months, 31 per cent.

In these figures, since one treatment, per patient, per week, was the usual procedure, the number of weeks corresponds approximately to the number of treatments given. It will be noted that the percentage of patients retained after twelve treatments is in excess of the percentage lost after ten treatments, in the highest efficiency figures for 1916, and that 31 per cent of the patients remained for twenty-four treatments. By an "efficiency comparison," it is obvious that results, in the light of these figures, have been more than doubled since 1914, a period of only six years. Whereas only 29 per cent of the patients were retained for ten treatments in 1914, 31 per cent have been retained for twenty-four treatments in 1920.

In consideration of the fact that most of these patients should be under continual observation for at least three years, these figures, on first thought, are not very encouraging. Patients are, however, held fairly well for a period of time sufficient to get one course of salvarsan, under the usual present day method of systematic treatment. They do fall rapidly by the wayside. But upon consideration of the progress shown in New York City since 1914, we believe there is good reason for encouragement.

### INSTITUTE HOLDS SUCCESSFUL SESSIONS

During the ten days of the Institute on Venereal Disease, which was held in Washington, under the auspices of the United States Public Health Service, November 22 to December 4, four full courses and eleven half courses were given. Of the full courses, the first three consisted of lectures on the diagnosis and treatment of venereal disease, and the fourth, of lectures on delinquent women and their relation to the law. The half courses were on various subjects concerning the protective work among girls, public hygiene, etc., and two of which were especially interesting from an institutional standpoint, on clinic social work and clinic management. The first course dealt with such problems as the function of the nurse in social work of this kind, in the dealings with the family, in the diagnosis of syphilis and gonorrhea in the home, etc. The lectures were given by Dr. Rachelle Yarros, Dr. Edward L. Keyes, Dr. Valeria H. Parker, and Miss Henrietta Additon. The course on clinic management dealt with the problems of quarters and equipment, personnel and functions, methods, records, and the essentials of a successful clinic. The lectures were given by Dr. Alec N. Thomson and Dr. H. G. Irvine.





SINCE it is an established fact that oral filth and infections of the peridental structures hold a causal relation to many systemic diseases, it follows that the physician often finds it necessary to *insist* that the teeth be kept clean.

On these occasions, Colgate's Ribbon Dental Cream doubtless comes to his mind because of its intrinsic merit as a dental detergent. He may also find satisfaction in specifying Colgate's, because it stands in such sharp contrast to the mass of tooth pastes for which wholly unwarranted remedial claims are made.

## MEETINGS, CONVENTIONS AND CONFERENCES

### MISSISSIPPI VALLEY CONFERENCE PASSES IMPORTANT RESOLUTIONS

THE Mississippi Valley Conference on Tuberculosis, which met at Duluth, Minnesota, on September 2, 3, and 4, passed several important resolutions. It was decided that there is a direct connection between the present disturbed condition in industry and the possible increase in the tuberculosis death rate. This is because industrial disturbances, strikes, and lockouts invariably mean reduced production of manufactured articles demanded daily in American homes. Following a shut-down in any industry, both employers and employees endeavor to make up, at least in part, the loss which such shut-downs entail in wages and output. This increased burden tends to break down the health of the workers both in office and shop. Therefore, since the lives, the welfare, and the happiness of a countless number of citizens are so closely bound up with the whole question of industrial relations, the Conference urges that all employers of labor, and labor leaders do everything possible to eliminate the industrial tie-ups growing out of labor disputes, and to promote a more human relationship between employers and employees.

Hoarding food for the purpose of forcing prices higher is a crime. It is nothing less than profiteering in human life, for failure to obtain a sufficient quantity of nourishing food, owing to high prices created by hoarding, is lowering the vitality of thousands of people to a point where they fall easy victims to tuberculosis. The Conference therefore urges the punishment of all hoarders of food products, and favors legislation to prevent further profiteering in the necessities of life.

Because in past years nurses' training schools have given little training in tuberculosis, and because it is the greatest preventable disease problem of today, the Conference suggests that all training schools provide for student nurses' spending a number of weeks in a well conducted tuberculosis sanatorium, or, if that is impossible, that a special course in tuberculosis be given.

There is no class of invalids more numerous or more neglected than those suffering from tuberculosis. Many physicians pay too little attention to the diagnosis of this disease. Or they may depend upon methods which are not sufficiently accurate for making an early diagnosis, which is especially important in this disease, as tuberculosis is curable with any reasonable degree of certainty only in its early stages. For this reason, the Conference requests all medical colleges to give a more conspicuous place in their curriculum to intensive training in diagnostic methods. It also recommends the establishment of

clinics for the instruction of physicians now in practice, and to this end urges the colleges and clinics to avail themselves of the facilities which are afforded by the numerous sanatoriums now in existence, or which are rapidly being constructed.

### NATIONAL SOCIETY FOR THE PROMOTION OF OCCUPATIONAL THERAPY HOLDS FOURTH ANNUAL MEETING

By WILLIAM RUSH DUNTON, JR., M.D., Chairman of Committee on Publicity and Publications, National Society for the Promotion of Occupational Therapy; Assistant Physician, Sheppard and Enoch Pratt Hospital, Towson, Md.

The fourth annual conference of the National Society for the Promotion of Occupational Therapy was held in Philadelphia, September 13 and 14, 1920. The Rittenhouse Hotel was the headquarters of the society, where all but one of the meetings were held. There was a splendid exhibition of handicraft work done in the occupational therapy departments of a number of hospitals. Among those represented were Allentown State Hospital, Bloomingdale Hospital, Montefiore Home, Walter Reed Hospital, and a number of hospitals in the Public Health Service. The character of the work was excellent and showed that there is a steady improvement in standards. The exhibit received a great deal of favorable comment from the visitors. The attendance at the conference was large, over 230 names being registered. It is interesting to note that the youngest visitor was eighteen and the oldest eighty-three years old. An international touch was given by the presence of two physicians from Czecho-Slovakia who are studying medical conditions in this country, Dr. Hynek J. Pelc and Dr. Juroslav Hulka.

The first session was given over to the business meeting, at which officers' and committees' reports were read, and the election of officers held. The officers for the ensuing year are: president, Dr. Herbert J. Hall; vice-president, Dr. C. Floyd Haviland; secretary, Mr. Louis J. Haas; treasurer, Miss Marion R. Taber; member of the board of management (to serve five years), Mrs. Carl Henry Davis; chairman of finance committee, Miss Marion R. Taber; chairman of committee on research and efficiency, Mr. Thomas B. Kidner; chairman of committee on installations and advice, Mrs. Eleanor Clarke Slagle; chairman of committee on publicity and publications, Dr. W. R. Dunton, Jr.; chairman of committee on admissions and positions, Miss Susan C. Johnson; chairman of committee on teaching methods, Miss Elsey R. Taft.





# HEADQUARTERS

Our facilities make us headquarters for the Endocrine Gland and Organotherapeutic products.

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Anterior Pituitary Powder and Tabs. Posterior Pituitary Powder and Tabs.

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Pepsin, U. S. P. scale, granular and powder.

Pancreatin, U. S. P. Powder.



Page 277

**E**LIXIR ENZYMES is a palatable preparation of the proteolytic and curdling ferments that act in acid medium. It is recommended as an aid to digestion and as a gastric tonic generally.

Elixir of Enzymes is of special service in correcting faulty proteid metabolism which is one of the principal causes of autointoxication.

Elixir of Enzymes is an excellent adjuvant and vehicle for exhibiting iodids, bromids, salicylates and other drugs that disturb the digestive functions. One dram of Elixir Enzymes will carry 46 grains of potassium iodid or 45 grains of sodium salicylate or 17 grains of potassium bromid.

Elixir of Enzymes contains the curdling ferment and may be used for making junket or curds and whey. Add one teaspoonful of the Elixir to half pint of lukewarm milk, stir thoroughly and let stand till cool.

For minimizing the organic disturbances and eliminating the corrosive effect of potassium iodid on the mucous membrane of the stomach as well as disguising the taste, the following combination is recommended:

Potassium Iodid, 2 ounces.

Distilled water, enough to make two fluid ounces.

To exhibit, for instance, 20 grains of potassium iodid three times daily, use one teaspoonful of Elixir of Enzymes, one teaspoonful of the above solution to half pint of lukewarm milk; stir thoroughly and let stand until cool. Take one-third of this quantity as a dose. This junket should be made up fresh every morning.

**ARMOUR AND COMPANY**  
CHICAGO

At the afternoon session, proceedings were formally opened by an invocation delivered by the Rev. Robert Norwood. In the absence of Commissioner of Health Martin, Dr. Woodward made the address of welcome, to which response was made by Mrs. Slagle, the president. Dr. Samuel W. Hamilton then spoke on The Importance of Occupational Therapy; Dr. Frederick Brush upon Heart Disease and Work, and Dr. Earl D. Bond upon Occupational Worker and the Trained Nurse. Following this, there was a delightful musicale furnished by Sascha Jacobinoff, violinist; William G. Thunder, accompanist; and two talented young ladies who played upon the harp and cello.

The evening session opened with an address by Dr. Herbert J. Hall upon The Occupational Aide of the Future, after which addresses were made by Colonel Robert E. Maddox upon Occupational Therapy in Public Health Service; Mrs. Clyde M. Myers upon Vocational Training of Tuberculous Patients; Dr. Horatio M. Pollock upon Records and Statistics in Occupational Therapy; Miss Beatrice Lindburg upon Work with Tuberculous Patients; and Dr. S. E. Devlin upon Occupational Therapy in Relation to Patient and State.

The first part of Tuesday morning was given over to several round tables, all of which were well attended and apparently enthusiastically carried on. At 11 a. m. the chairmen of these round tables made a report before the whole society, so that all were able to share in the conclusions reached.

The afternoon session was held in the assembly room of the New Jerusalem Church opposite the hotel. Miss Frances E. Wood read a paper on the Medical Work Shop, after which, under the chairmanship of Miss Susan C. Johnson, a number of reports and short papers upon the Training of Teachers were read. Miss Mary E. Lowney also spoke upon Progressive Rehabilitation of the Handicapped.

In the evening a banquet was held at which there were a number of speakers, and the leadership of the society was formally handed over to Dr. Hall.

On Monday a luncheon was given for the society by the Philadelphia School of Occupational Therapy, at their building, 2131 Spruce Street. On Tuesday afternoon the director of the Department of Public Health, Dr. C. Lincoln Furbush, and Mrs. Furbush gave a reception at their home, 4300 Locust Street.

## CONNECTICUT HOSPITAL ASSOCIATION HOLDS EXECUTIVE SESSION

An executive meeting of the Connecticut Hospital Association was held November 18, to consider changes in the constitution and by-laws, and to get reports from the different committees. One of the main objects of the meeting was to ascertain as far as possible the need in this state of a home for chronic and incurable cases, in order to release as many as possible of the beds in the general hospitals that are now occupied by this type of case. Another object was to get a report from the committee appointed to adjust with the various insurance companies the rates for the care of compensation cases. The bill providing for the care of chronic and incurable cases will be presented to the General Assembly in January, sponsored and strongly endorsed by the Association.

The better connoisseur of blood pictures the internist is, the better understanding of his patient's condition and the more intelligent and worth-while prognosis he can make.

## DISPENSARY SERVICE BUREAU

The American Hospital Association has just issued the following folder, describing its service bureau on dispensaries, under the title, "How Meet the Cost of Dispensary Service? How Make the Service Worth the Cost?"

### Dispensary Housekeeping

The high cost of living has hit dispensaries as it has everything else. What can be done to meet the higher costs without diminishing service? Every hospital that has an out-patient department and every dispensary run independently of a hospital, have to face this question and ought to answer it.

This Service Bureau of the American Hospital Association aims to help find a practical answer.

Making ends meet has two sides: (1) the side of finance, getting enough income to balance expenses; (2) the side of service, rendering enough dispensary service to meet the needs of the community or that part of the community which the particular institution purposes to serve.

Some of the practical questions follow.

### Do These Questions Interest You?

1. How much income do you derive from the operation of your dispensary from admission fees, fees from medicine, etc.? What proportion are these fees of your total expenses? Do you know that many well-established dispensaries are securing from 30 per cent to 50 per cent of their entire expenses from their patients without curtailing service to those who cannot pay even nominal fees?
2. How much time of your doctors in the dispensary is spent on non-medical work, clerical or policing? Do you know what other dispensaries have done to enable the doctors to devote their time to the actual medical work, that only doctors can do, and how the expenses of this assistance have been met?
3. How best relate dispensary medical staff and hospital staff so that the hospital will stimulate the medical work of the dispensary and the dispensary make the hospital more efficient by aiding in the admission and aftercare of patients?
4. Do you know how many patients, with probably serious diseases, make only one visit and never come back?
5. How nearly is your dispensary meeting such community needs, as cooperation with the charities of the city, with the medical school inspection, with the department of health?

Some of these questions can be answered by the experience of other dispensaries. Some require local study in your dispensary or in your community. Studies which yield facts are often the means of securing both more money and better service.

Can the Service Bureau help you?

This Bureau is available to all interested in its field. To all members of the American Hospital Association, ordinary service rendered by correspondence is without charge. Where local surveys or investigations by the staff of the Bureau are necessary, the bare cost will be charged to institutional members, the Association meeting the overhead expense. An additional charge, ordinarily about 10 per cent, will be made to others than institutional members to cover overhead.

Individuals or organizations not members of the American Hospital Association may also secure the service of the Bureau. Correspondence from any such inquirers will be gladly answered. Special advice or services will be charged by the Association to non-members at reasonable rates.

Address the Service Bureau at the office of the American Hospital Association, 22 East Ontario Street, Chicago, Ill.; or the chief of the Bureau may be addressed directly if desired: Michael M. Davis, Jr., 15 West Forty-third Street, New York City.

### Even Worse Than We Thought

The following was found on a dermatology examination paper in one of our training schools:

"What are the symptoms of hereditary syphilis in a new-born baby?"

"Hutchinson's teeth and a rash that doesn't itch."



# ROYAL BAKING POWDER

The most celebrated of all the baking powders in the world—celebrated for its great leavening strength and purity.

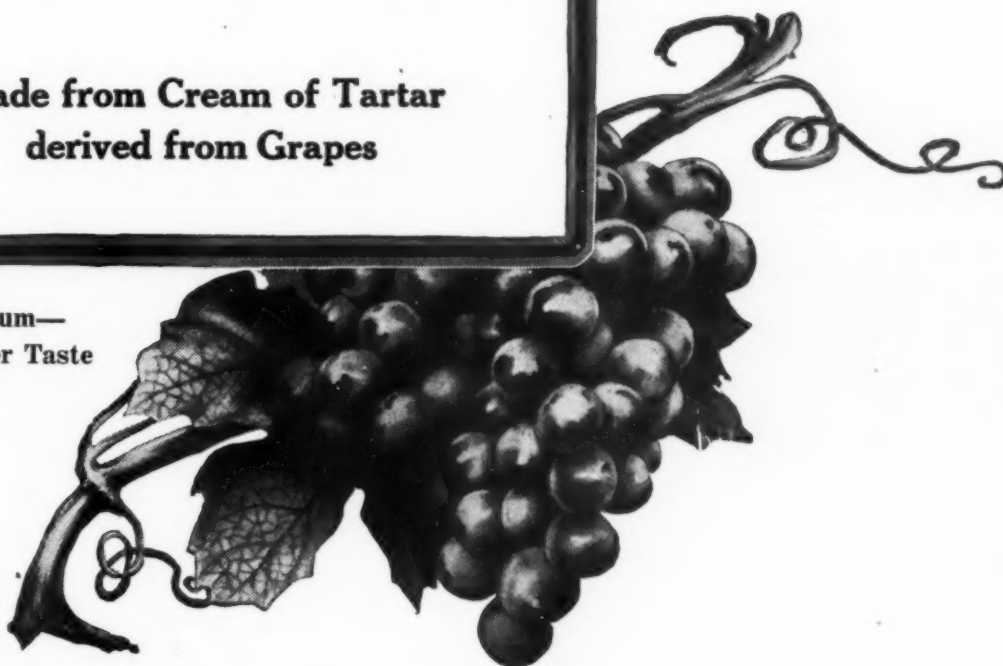
It makes cakes, biscuit, bread, etc., wholesome, and insures against harmful ingredients and all forms of adulteration that go with inferior brands.

**Made from Cream of Tartar  
derived from Grapes**

**Contains No Alum—  
Leaves No Bitter Taste**



***Absolutely  
Pure***



Consult the 1920 Year Book for Catalog information.

## HINTS TO HOSPITAL SUPERINTENDENTS

### SECURING TAX-FREE ALCOHOL

It has been found that less than 25 per cent of the hospitals are availing themselves of the privilege of purchasing tax-free alcohol. The United States Industrial Alcohol Company, at a great expense, through its representatives in Washington, secured a modification of the ruling on alcohol, so that it could be obtained for hospital use tax-free. Inasmuch as \$200 or more may be saved by a hospital on every barrel of alcohol used, superintendents should acquaint themselves with the procedure. An editorial in the November issue of *THE MODERN HOSPITAL* gives the necessary information. The new method which has been adopted is much simpler than the old one. Under the old procedure superintendents often had to order alcohol three or four months in advance, to be sure of having it on time, the new scheme does away with this necessity, and also assures full proof alcohol, in that it has not been set aside for some time, as formerly.

### ROOMS ENDOWED BY NURSES

In the Presbyterian Hospital of the city of Chicago there are two private rooms endowed by graduate nurses, one by the Alumnae Association of the Illinois Training School, and the other by the alumnae of the hospital training school. Each association pays \$10,000, the interest on which is used for the upkeep of the rooms. Aside from the fact of having such rooms in the hospital, this is also a fine thing because it keeps the nurses in touch with the hospital after they have finished their training. They feel that the hospital where they have helped to endow a room is their home when sick, and they are likely to praise the institution, which many times brings new applicants to its training school. It would be a good thing for a hospital to encourage this practice as much as possible.

### PLACE TO GIVE ANESTHETICS

It is very necessary that hospitals should realize the importance of the psychic factor in anesthetics. The surroundings just before the anesthetic is administered will probably have a decided effect on the patient's mind, and may easily affect the recovery. A story is told of the experience of a woman who, being forced to wait an hour and a half after she was brought from her room before the administering of the anesthetic, thought from the sights and sounds around her that she was in the "chamber of horrors." The experience had a very lasting effect upon her mind. A possible solution would be to have the anesthetic given in the patient's room, after which the removal could be made, but if this is undesirable from a surgical standpoint, some better provision should be made than we find at present in many hospitals, to minimize the terrors of unpleasant surroundings.

### TANKS AND FITTINGS IN FIRE EXTINGUISHING APPLIANCES

In winter particular care must be taken of the tanks and fittings in fire extinguishing appliances. They should be examined, whether they are for steam heating, general water service, or fire protection, to see that none is frozen or has been frozen, and that they are in operative condition; and where there is any danger of freezing, the necessary protection should be provided. It is important to see that the tank heaters are of adequate capacity for the tanks they serve. Both heaters and circulating pipes should be cleaned of any rust or sediment; tanks also should be cleaned. Any pipe lines which may be in an exposed location, either between the ground and first floor, between buildings, or near windows, etc., should have suitable boxing around them to keep them free from frost. Open joints or gaps in the boxing are a prolific source of trouble; it is essential that all such defects be discovered and remedied at once.

### CLASSES FOR "UNTIDY" PATIENTS

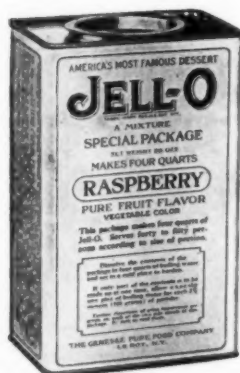
In every state hospital the "untidy" patients, or those who have degenerated into such a state that the commonest demands of sanitation are lost upon them, are a source of trouble and anxiety to everyone. Little attempt had been made to improve this condition, which was considered inevitable, until the Department of Public Welfare of the State of Illinois, as a part of the occupational therapy it has been starting in its various state hospitals, established some habit training classes, to start at the very beginning. The most hopeless patients were selected for the trial. Sufficient time has elapsed to show results, which have been very encouraging. Dr. R. T. Hinton, of the Elgin State Hospital, reports that of a class of fifty-five patients who in May, 1920, were not allowed to go to the general dining hall for their meals, twelve were sent in July, thirty-five in August, while now all the class is allowed to go, and the special dining room has been closed.

### ESTABLISHING OUT-CLINICS

When patients are granted parole from an institution they are required to report back, usually, every two weeks. It is impossible for some of them to do so, on account of the distance from their homes to the hospital. It is a very good plan for the social service department to establish out-clinics in the district by obtaining the cooperation of local organizations in the matter. These out-clinics greatly simplify the patient's problem of keeping in touch with the hospital.

Every child has the right to be well born.—John Ruskin.





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## LETTERS TO THE EDITOR

### FOOD FOR THOUGHT

To the Editor of THE MODERN HOSPITAL:

Why take music into hospital wards? My answer would be because music has proved a great healing force from a psychological and physiological point of view. This being true, can it be more needed any place than in hospitals, where discouragement reaches its highest point and ambition its lowest ebb?

It is a matter of record that Florence Nightingale, during the Crimean War, realizing the practical benefit to be derived from music, made an effort to have it brought to the bedside of wounded soldiers; and Sir Richard Quain, an eminent surgeon, heartily approved of the plan. Unfortunately nothing remains to show that the idea was carried out. However, Miss Nightingale, on her return to London, instituted corridor singing in the hospitals, which is still going on.

Some two decades have passed since I entered an American training school for nurses, bringing with me a great appreciation of music in its relation to humanity and having a vision of its immense value, if properly used, in functional disorders. During my first months of hospital life, I keenly felt the gloominess and depression, and all my time off duty was spent at concerts or any place where music was to be heard. My own longing for music led me to believe that the patients who suffered from the dejection and melancholia attendant upon illness might also be benefited by the healing power of music. We, therefore, brought music into the hospital, and very soon the realization of their feelings came to me. Some would long to hear a piece on the piano; others wished for string instruments—any kind from a banjo to a violin—and the wee tots when I tucked them in at night would wistfully say, "Sing something like mother does, so I go to sleep." The children from the slum districts would even ask for the "hand organ in our alley." One night an old Irish woman who suffered much from inflammatory rheumatism tossed and moaned. Though she had been given an opiate, nothing quieted her; so I began singing softly an old Irish song, and soon she slept. After that it was a nightly custom, and the day that gave me the proud title of head nurse also gave me courage to make a plea for ward music. Permission was finally granted. A sweet-voiced singer came into my ward, and all went splendidly, until suddenly from Biddy's corner, came a hysterical crying. Confusion reigned, and the ward was quickly sans singer, and sans permission for ward music. In taking Biddy to task for her unseemly spell and selfishness in depriving the other patients of their enjoyment, the only explanation obtainable was, "Shure, I liked the music, but I couldn't stand for the way she opened her mouth when she sung."

The bible gives the first account (I Samuel, Chapter

XVI) of the therapeutic effect of music. It tells us that David played on his harp "until Saul was refreshed and well."

The one who gives music to the suffering must give with understanding and sympathy; he must not stand by in helpless sympathy but must know how to be tactfully, sympathetically helpful. Only brave, courageous artists are wanted in hospital wards where any emergency may at any time occur,—comely, talented, well-groomed performers, giving of their best in music, until the listeners can echo the words of Dr. John Armstrong in the "Art of Preserving Health"—"Music exalts each joy, allays each grief, expels disease, and softens every pain. Only in this way will suffering humanity be benefited by music from a mental, moral, physical and spiritual viewpoint."

ISA MAUD ILSÉN.

### THE PUBLIC SANATORIUM AS COMPARED WITH THE PRIVATE IN THE TREATMENT OF TUBERCULOSIS

To the Editor of THE MODERN HOSPITAL:

After an experience of twelve years in different institutions treating tuberculosis I have tried to formulate an opinion regarding the value of private sanatoriums as compared with public sanatoriums in the treatment of tuberculosis.

There should be a practical side to this question in view of the fact that so many localities are building public institutions. In some instances the authorities are apparently going to extremes in building these institutions as we know of instances where there is one employee to each patient and the per capita cost of maintenance has amounted to, in some cases, almost ten dollars a day.

As a rule the cost of construction in the public institutions is a great deal more for such patient or bed than that in the private institution. It has been my experience, also, that an indigent patient who is cared for by the state or county will complain when he is compelled to take treatment in a building similar to one where the private patient is glad to pay twenty-five or thirty dollars a week. Also the patient in a public institution expects a great deal more for nothing than does the private sanatorium patient for the stated amount of money. This is especially true of food and nursing.

The attitude of the patients toward the doctors in charge is a very important consideration. Many patients in public institutions seem to feel that the doctors are grafters and do not have interest in the work and they will, therefore, go to a private sanatorium on account of the reputation of the doctors in charge whose ability to treat tuberculosis is recognized. In other words the public patients feel that the doctors in public sanatoriums





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are there to be worked. A comment dropped by one of my patients in conversation with another who complained that she had a pain in the chest—"Tell the doctor, that is what he is here for"—well illustrates the attitude of public patients toward the doctor.

In public institutions the salary paid to physicians is entirely inadequate and the doctor has many more patients to treat than does the doctor in the private sanatorium. Some tuberculosis sanatoriums are so large that the treatment is all routine and the patient is not considered individually.

A very important consideration in comparing the value of sanatoriums is the attitude of the public and of the board of managers. On the one hand, a superintendent in a public sanatorium must use his energy to secure the necessities for the patients, and, on the other hand, the board of managers are often reluctant to contribute the money for these necessities.

Politics has to be considered in the public institutions and on account of frequent changes in the administration much money is lost and many attempted improvements are stopped at a great loss in money and energy.

There are institutions semi-private similar to Gaylord Farm Sanatorium, Wallingford, Conn., where there are very fine results obtained. It would seem that such institutions run by anti-tuberculosis associations would be the ideal ones of the future. In this way there would need be no politics or public interference and the patients would appreciate what they were getting if they had to pay at least a little. For those patients in public institutions who are able to do a few hours work a day, an industrial colony is absolutely necessary.

HERBERT F. GAMMONS, M.D.

Superintendent, Woodlawn Sanatorium, Dallas, Texas.

## ROCKEFELLER FOUNDATION TO ASSIST CENTRAL EUROPEAN MEDICAL SCHOOLS

To assist Medical Schools in Central Europe, the Rockefeller Foundation announces a cooperative program covering the following points.

1. Aid in the rehabilitation of scientific equipment for medical teaching and research.
2. Aid in furnishing medical journals to universities throughout Europe.
3. An invitation to the authorities of Belgrade University Medical School to study medical education in America and England, as guests of the Foundation.

Colonel F. F. Russell, who has been in Prague since August, serving as technical advisor in public health laboratory organization to the Czech Ministry of Hygiene, will arrange the details of the Foundation's cooperation with the medical schools.

These activities of the Rockefeller Foundation in Central Europe are the result of investigations made there recently by its representatives. The following extract from a report submitted to the Foundation by one of its officers, sent to Europe to make a special inquiry into their needs, gives some idea of conditions in Central Europe with respect to medical education:

Decisions of far-reaching significance in the matter of medical school support, the training of nurses, the care of the sick and the prevention of disease must be made in these countries within the next few years. Expert guidance and some assistance in starting sound programs now may mean much for generations to come.

Medical schools of high rank and long standing exist in the following cities of Central Europe: Vienna, Gratz, Budapest, Prague, Cracow. Other schools of importance are at Warsaw and Lemberg in Poland, at Innsburg in Austria, at Zagreb (or Agram) in the Croatian state of Jugo-Slavia.

This comparatively small number of medical schools serves a total population of approximately seventy-five million people. With the single exception of Austria, all of the countries of the region under consideration suffer from a great shortage of physicians.

There are reported to be less than three hundred doctors in all Serbia. Outside of the army medical forces, less than two thousand physicians are available to care for the twenty-five million inhabitants of Poland. Additional schools are needed adequately to serve these countries, particularly those of the south and east.

There is a five-year interruption of medical training in Europe which will affect the supply of physicians available during the coming generation. The instruction of adequate numbers of physicians for the years immediately ahead is essential.

In all of the universities of Central Europe the equipment (glassware, rubber, chemicals, and apparatus usually replenished year by year) has been very largely used up during the four years of the war, and the two years of disorganized conditions and low exchange which have followed the armistice.

The situation in Germany is somewhat different. That country is adequately supplied with medical schools, and much scientific apparatus is manufactured there.

The greatest desire for American and British Medical Journals was expressed at every university visited. The journals are supplied on an arrangement whereby the university concerned pays in its national currency at the pre-war rates of exchange, the Foundation making up the difference due to loss in exchange.

The secretary arranged personally for the supply of journals to the following universities—Vienna, Budapest, Zagreb, Prague, Cracow, Lemberg, Warsaw. It is proposed to extend the services to Gratz, Innsbruck and Bucharest, in Central Europe, and to some thirty of the principal centers in France, Belgium, Italy, and Germany.

With the idea that Belgrade is one of the strategic points in a world program in which a medical school must be established in the near future, it has been decided to invite a group of four of the men responsible for its development to make a visit to America for study and inspection.

It has also been decided that further assistance will be given, by lending a technical adviser in the organization of medical education, and that the Belgrade officials will be authorized to recommend to the Foundation from time to time, as candidates for fellowships in specialized post-graduate medical study, persons who may be under appointment or consideration for the faculty of the proposed school in Belgrade.

## VACCINE FOR YELLOW FEVER DISCOVERED

The discovery by Dr. Hideyo Noguchi, at the Rockefeller Institute for Medical Research, of a vaccine for yellow fever, introduces a new factor in yellow fever control, through the possibility of making persons immune to yellow fever by vaccination.

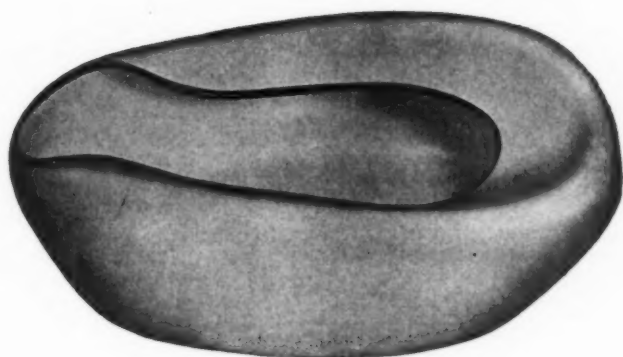
Heretofore, work in yellow fever control has been entirely that of prevention of infection by controlling breeding places of the mosquito which carried the yellow fever germ. The isolation of the yellow fever organism, however, has made it possible for Dr. Noguchi to develop a serum, which it is believed will reduce the mortality from yellow fever, and a vaccine, which gives promise of protecting the non-immunes against their contracting the disease.

Already vaccination against yellow fever of people going to tropical countries is being made in New York. This work is being done at the Broad Street Hospital with vaccine furnished by the Rockefeller Institute.

The first shipment of vaccine for yellow fever from the Rockefeller Institute to tropical countries was made a year ago when three hundred bottles were sent to Mexico. Other shipments have been made since then, the latest on November 10. All vaccine supplied to Mexico is sent to the Mexican Department of Health which arranges for its distribution.

The Central American countries are so well convinced of the efficacy of Dr. Noguchi's vaccine that they are permitting travel without quarantine detention, of those who have been successfully vaccinated.





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## BOOK REVIEWS AND CURRENT HOSPITAL LITERATURE

### CLEVELAND HOSPITAL AND HEALTH SURVEY ISSUES POPULAR SUMMARY

THE Cleveland Hospital and Health Survey recently issued a popular summary of its exhaustive report, just off the press, the result of the work of a large staff of competent men and women, experts in their fields, who were appointed for this service by the Cleveland Hospital Council. The complete record separately bound by sections, may be obtained from the Cleveland Hospital Council, 308 Anisfield Building, Cleveland, O. Following is a list of the reports: Vol. I, Introduction, General Environment, Sanitation, by Dr. Haven Emerson; Vol. II, Public Health Service, Private Health Agencies, by Dr. Haven Emerson and Louis I. Dublin, Ph.D.; Vol. III, A Program for Child Health, by Dr. S. Josephine Baker; Vol. IV, Tuberculosis, by Dr. Donald B. Armstrong; Vol. V, Venereal Disease, by Drs. William F. Snow and Alec Thomson; Vol. VI, Mental Diseases and Mental Deficiency, by Drs. Thomas W. Salmon and Jesse M. W. Scott; Vol. VII, Industrial Medical Service, Women and Industry, and Children and Industry, by Dr. Wade Wright, Mrs. Marie Wright, and Miss Florence V. Ball; Vol. VIII, Education and Practice in Medicine, Dentistry, and Pharmacy, by Dr. Haven Emerson; Vol. IX, Nursing, by Miss Josephine Goldmark, A.M.; Vol. X, Hospitals and Dispensaries, by Michael M. Davis, Jr., Ph.D., and Dr. W. L. Babcock; and Vol. XI, Method of Survey, Bibliography of Surveys, and Index, by Drs. Haven Emerson and Gertrude E. Sturges.

The Survey's abstract of the volume devoted to hospitals and dispensaries follows:

Cleveland hospitals care for 10 per cent of the 20,000 people who are ill at any one time. Hospitals furnish facilities unavailable otherwise, and through them doctors can render better service to a larger group than in any other way.

Cleveland falls far below other large cities, however, in the number of hospital beds for its population. On the basis of five beds for each thousand population, there should be 1,500 more. The use of the present beds, as well as the new ones, must be more widely varied. Now nearly half of them are devoted to surgical cases, only 115 to obstetrical cases, four to eye diseases, and none especially to ear, nose, or throat troubles. The City Hospital, which has 100 beds for contagious diseases, should have 400.

It has been found that the best system for conducting a hospital is through a board of trustees. This board should include representatives of all elements, not merely doctors and nurses, and not business men exclusively. They must select a superintendent who is in every way suited to the office and must then give her sufficient authority. The superintendent's lack of proper authority

has been observed, as has also the fact that the nursing schools are being used as a means of obtaining cheap nursing labor. If this persists, the relation of such schools to the hospital must be as distinct as that of the medical schools at the present time.

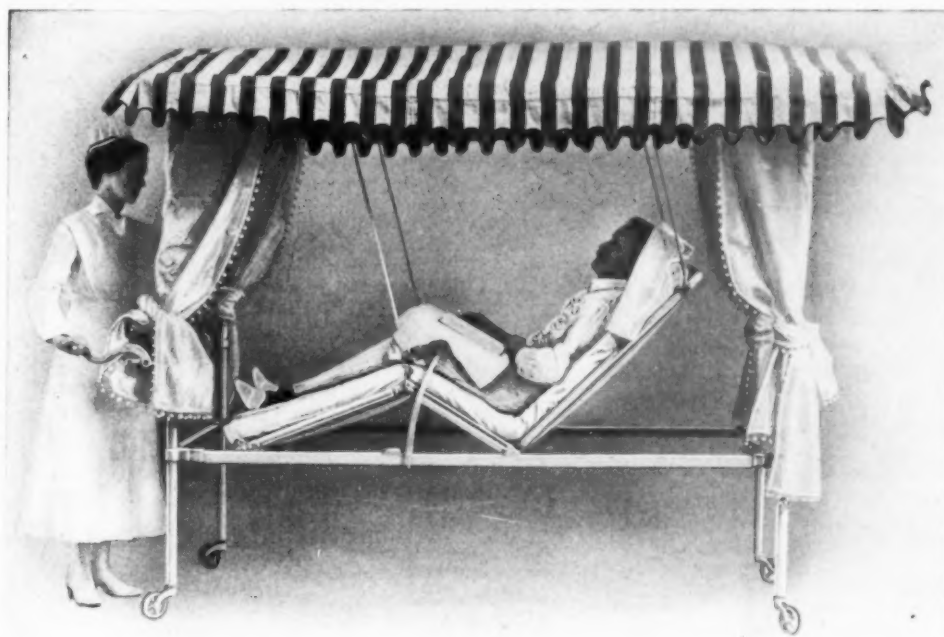
Each hospital must have its regular staff of doctors. Only 29 per cent of Cleveland doctors are affiliated with any hospital. The foreign-born physicians have almost no representation, and the one negro doctor on the staff of Lakeside Hospital is the sole representative of his race on a Cleveland hospital staff.

Every hospital should have a complete system of accounting and bookkeeping, employing experts if necessary. There should be an investigator on the staff to ascertain the financial condition of patients. It would be possible for several hospitals to engage the same investigator.

The purchasing department of the Hospital Council is a distinct and notable achievement, characteristic of Cleveland. Through cooperative buying, the hospitals are able to take advantage of seasonable markets for canned goods and other provisions, and the purchasing of drugs and surgical supplies in large quantities naturally reduces the cost. It is surprising that some hospitals do not welcome the opportunity of using this department.

The problem of getting patients to hospitals is one that has received almost no attention in Cleveland. There are three agencies through which ambulance service may be obtained: the police patrol, the private undertaking establishments, and the City Hospital, which possesses one ambulance. While the police patrols are prompt, they carry no first aid kit, an inexcusable omission, and there is a natural aversion on the part of the citizens to riding in a police emergency ambulance. Nor do they relish being carried through the streets in the undertaker's "dead wagon." The City Hospital ambulance gives most unreliable service, even postponing a call two days. There is complaint, too, about the failure to fumigate the ambulance after use. Each large hospital needs its own ambulance, and the smaller ones could maintain such service by combining.

Eighty-seven and a half per cent of the patients who leave the hospital go home to unfavorable surroundings. It is the duty of the hospital to give instruction for home convalescence and to make definite suggestions for use of the dispensary. A city as large as Cleveland should have institutional accommodations for 12,000 convalescents during a year. Such a home should be in the country. The building need not be new or expensive, and the cost, which is only half that of hospital care, could be borne by charging \$1.75 per day. At present the hospitals must take care of convalescents, as is proved by the fact that 12.5 per cent of the hospital cases observed had been in the institution over two months.



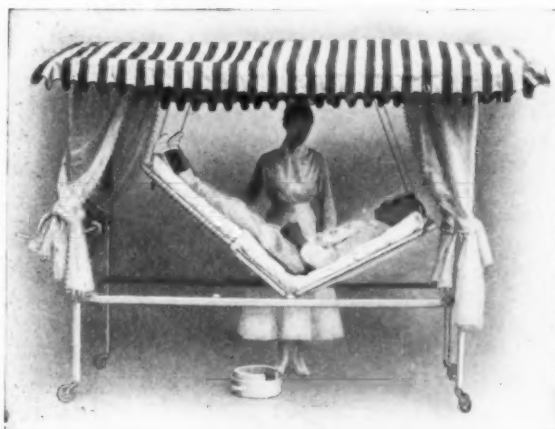
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Social service in hospitals and dispensaries of Cleveland has been only slightly developed. Those organizations that are in existence are too closely confined to hospital admission and dispensary records. It should not be the province of social service workers merely to be kind to the patients, that is the general duty of the hospital, nor should these workers have to spend their time admitting patients and learning their financial status, important as this work is. Their distinct duty is to be an adjunct to medical treatment, a link between the hospital and the home.

Foreigners are prone to think of hospitals as "places where you go to die." It devolves upon the hospital to quiet their fears, not only to make them understand but to render them understood. It is excellent practice to provide interpreters and foreign visitors who contribute valuable help.

Cleveland's lack of appreciation of dispensary service is indicated by the fact that there are only twelve calls at dispensaries per one hundred population here, while in New York, Boston, and Chicago there are eighty, fifty, and forty, respectively. Six hospitals conduct dispensaries and each of the seven health centers supports one.

It is evident that the hospitals and dispensaries of Cleveland were planted, not planned. Each has grown without any relation to the other. The time has come when a community plan should be realized, so that the present neglect of care of children, and of eye, ear, and nose diseases will be impossible.

Too much cannot be said of the good work done by the Cleveland Hospital Council. Organization is only machinery, however, to make the road smoother. Ultimate success depends upon the individual soul, civic pride, and spirit of cooperation, qualities which Cleveland has always manifested in a very large degree.

**PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE.** By J. J. R. Macleod, M.B., professor of physiology in the University of Toronto, Toronto, Can.; formerly professor of physiology in the Western Reserve University, Cleveland, O., and by others.<sup>1</sup>

This book, as its title indicates, correlates physiology and biochemistry with clinical medicine. It fulfills this function very well indeed. Since in so many diseased conditions the physiological activities of the body are perverted, it is of extreme importance nowadays that the underlying abnormal physiological and biochemical factors be well appreciated by clinicians. In order for these changed physiological conditions to be understood, one must first have knowledge of physiology of the normal. Great strides have been made in physiology in recent years, and in this book these advances in our knowledge are brought up to date. From this point of view this work can be considered a text in advanced physiology. Nevertheless, it should be easily comprehended by all medical readers.

The subject form is presented in a very clear, logical manner and the style is simple and very attractive. The book reads easily and even entertainingly. The table of contents is very thorough and comprehensive, supplementing the index, which is also very satisfactory. The author has had the wisdom to append to the end of each chapter a short but adequate bibliographic list, which adds so materially to the value of a textbook that it really should be required in all scientific texts. The chapters on shock and on metabolism, especially on carbohydrate metabolism and its relationship to diabetes, are especially to be commended.

This book should be valuable to every physician who wishes to make himself familiar with recent advances in physiology and biochemistry and who wishes to study and treat his patients in a proper and scientific manner.

**A TEXTBOOK OF DERMATOLOGY.** By J. Darier, physician to the Hospital Saint-Louis. Member of the Academy of Medicine, Paris, France; honorary member of the American Dermatological Association, etc. Authorized translation from the second French edition. Edited with notes by S. Pollitzer, New York, ex-president of the American Dermatological Association, corresponding member of the French Society of Dermatology and Syphilography, etc.<sup>2</sup>

As anticipated, Pollitzer's translation of Darier's book is a valuable addition to the textbooks on dermatology. The illustrations are excellent and numerous. The chapters on tuberculosis and syphilis are extraordinarily good, while the one on treatment is not excelled by that of any other publication. The book is particularly valuable to the junior and senior medical student. There seems, however, to be scant attention paid to the literature of dermatology from other countries. Reference to many splendid contributions from American and other dermatologists has been omitted. The book should be included in every modern medical library.

J. S. EISENSTAEDT.

**THE PRINCIPLES OF ANTE-NATAL AND POST-NATAL CHILD PHYSIOLOGY,** Pure and Applied. By W. M. Feldman, M.B., B.S., (Lond.)<sup>3</sup>

One seldom finds a book that contains as much information as the present volume. The author has gathered a wealth of knowledge which he embodies in a small volume of 694 pages. He presents the reader not only with a great deal of data on the subject of ante-natal and post-natal physiology, but he discusses at length many allied subjects, such as theories of heredity, mechanics of development, and physiology of fertilization, the whole theses displaying a great deal of erudition and profound scholarship.

If there is any criticism on this excellent volume it is in the direction of the mathematical insertions scattered throughout the book. In some places the author devoted the greater part of a chapter to the presentation of mathematical formulas that detract from the interest of the book. He erred in the same direction in a previous publication, "The Jewish Child," a most valuable contribution in every other respect.

As a whole, however, one may find in the "Principles of Ante-Natal and Post-Natal Physiology" a great deal of interesting information. The volume would make a valuable addition to the library of every physician and scientist.

### Hospital Slogan

Perhaps all state hospital superintendents would find that it was helpful to formulate a slogan for their institutions. They might do worse, however, than adopt the one of the Chicago State Hospital, as stated by Dr. Charles F. Read, the managing officer. It is: "This hospital must be a good place for the patient and a good place for the employee." The hospital is maintained by the state of Illinois for the mentally sick, it is supported by the taxpayers of the state, it has nothing to sell, but it has one great thing to give, and that is service.

1. C. V. Mosby Company, St. Louis, 1920.

2. Lea & Febiger, Philadelphia, 1920.

3. Longmans Green & Co., New York, 1920.